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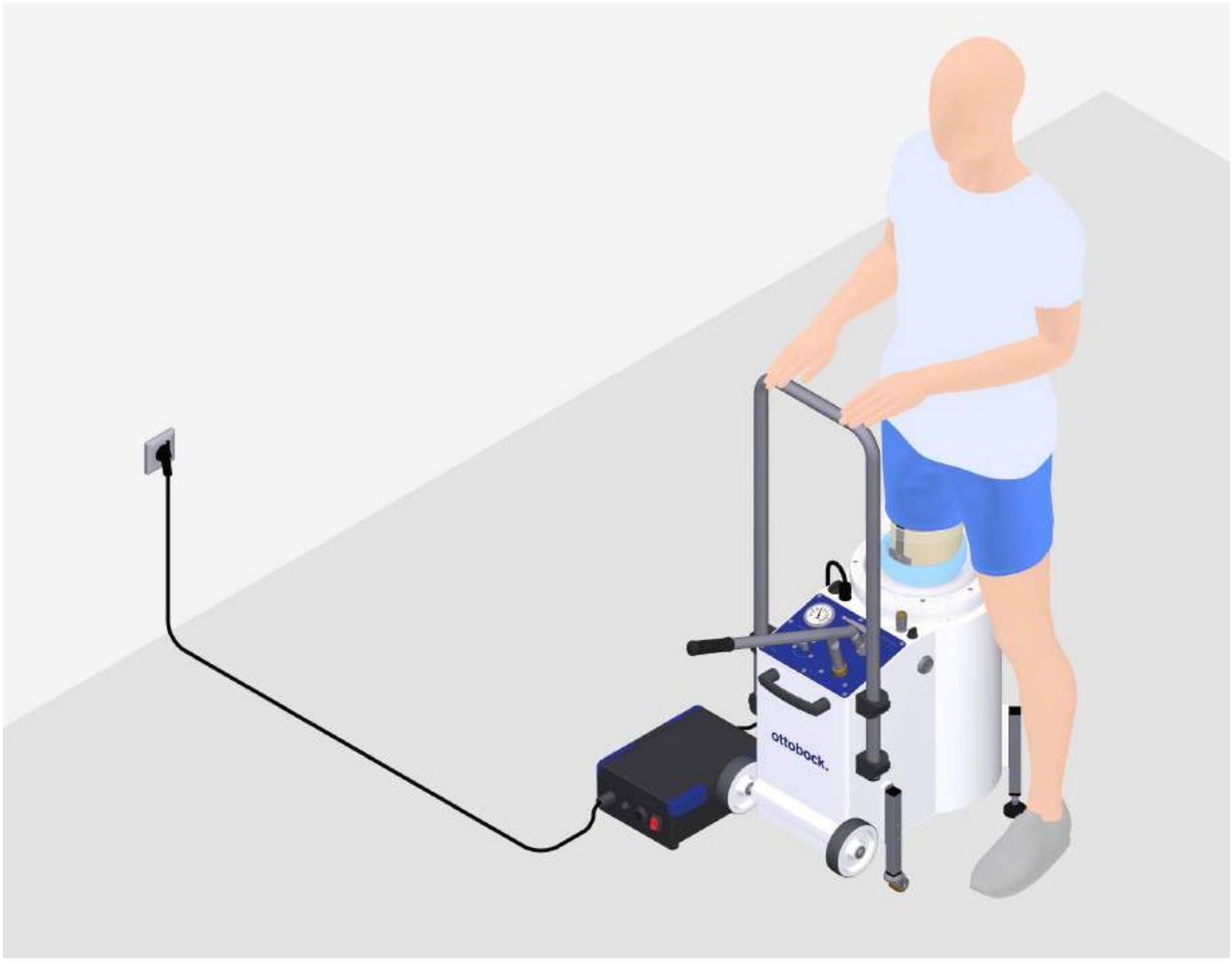

hydronetic lumeo.
743G18=1-1, 743G18=1-4

EN Instructions for use 3

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1 Important information on this document

WARNING!

Danger to life, extremely serious injuries and damage to property due to failure to observe the instructions for use

This document and the product are intended exclusively for the fabrication of a prosthesis by qualified personnel with technical knowledge of lower limb prosthetic treatment.

- ► Please read this document carefully before using the product and observe the safety notes and warning messages.
- ► Please contact the manufacturer if you have questions about the product or in case of problems.
- ► Please keep this document for your records.

INFORMATION:

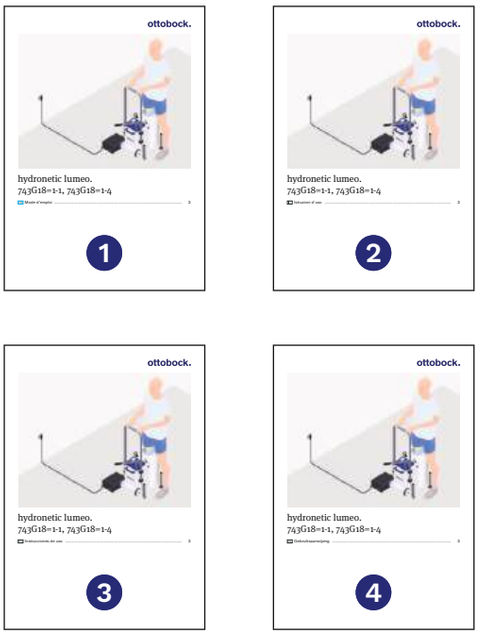
Scope of this document version

The scope of this document version is limited to the functions and areas of application described in this document and, in particular, the fabrication of a prosthetic interim socket with the lumeo resin casting socks listed under the heading **Permissible user weight for lumeo resin casting socks** in the **Technical data** section and the corresponding specification of the maximum user weight. If further lumeo resin casting socks, new functions and areas of application become possible in the course of technical development, these will be published via the **www.ottobock.com** Internet portal and included in the next version of these instructions for use. This updated version can be ordered as described in this section under the heading **Ordering documents**.

Documents included in delivery

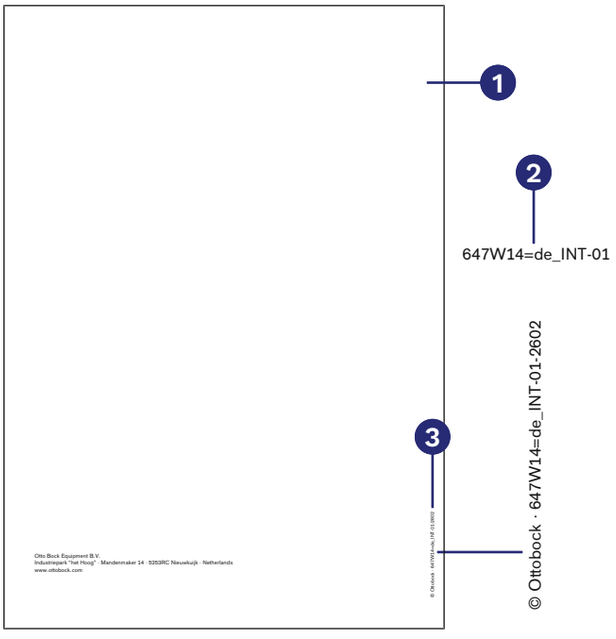
1. Instructions for use (German)
   Article number:
   647W14=de_INT
2. Instructions for use (English)
   Article number:
   647W14=en_INT

Additional documents available for order



1. Instructions for use (French)
   Article number:
   647W14=fr_INT
2. Instructions for use (Italian)
   Article number:
   647W14=it_INT
3. Instructions for use (Spanish)
   Article number:
   647W14=es_INT
4. Instructions for use (Dutch)
   Article number:
   647W14=nl_INT

Ordering documents



1. Last page of the document
2. Article number with version number
   Example from the illustration
   647W14=de_INT-01
   Article number: 647W14=de_INT
   Version number: 01
3. Standard line with article number and version number

The documents listed under the headings “Documents included in delivery” and “Additional documents available for order” can be ordered as a PDF file or a printed copy.
The following information is required:

- Recipient address data (company name, first name and last name of the customer, full address)
- Article number of the document – the latest version is always delivered
- Photo of the product nameplate (on base unit)

Email address for ordering digital documents (PDF files)

- customersupport.pe@ottobock.com

Email address for ordering printed documents

- order-ifu@ottobock.com

2 Product Description

Intended use and functional description

The product was developed exclusively for orthopaedic technology. It is intended exclusively for use in the fabrication of a plaster cast or prosthetic interim socket for the lower limb – after a transtibial amputation – with a liner. Use for other purposes is not approved. Activities not described in this document (e.g. repair work) do not come under the scope of the intended use and may not be carried out without the approval of the manufacturer.

The product (743G18=1-1, 743G18=1-4 hydronetic lumeo) can be used for the fabrication of both a TT prosthetic interim socket made of a fibreglass composite and a plaster cast of the lower limb after a transtibial amputation. During fabrication of the TT prosthetic interim socket, textiles impregnated with resin are pulled over a user's residual limb. The resin cures under UV light in a few minutes. The material can then be thermoformed and reworked. The prosthetic interim socket is intended for holding a residual limb with a liner. The system makes it possible to record the load points of the residual limb in the prosthetic interim socket under actual conditions and to produce a well-fitting cast under full load. Due to the hydrostatic pressure, the exact anatomy is recorded while making the cast. The soft tissue situation, bony structures and scar tissue are mapped under load. In this way, the shape of the prosthetic interim socket is adapted to the anatomy of the residual limb.

1. User's residual limb
2. Hydrostatic pressure in the pressure tank of the base unit

Difference between the 743G18=1-1 and 743G18=1-4 variants

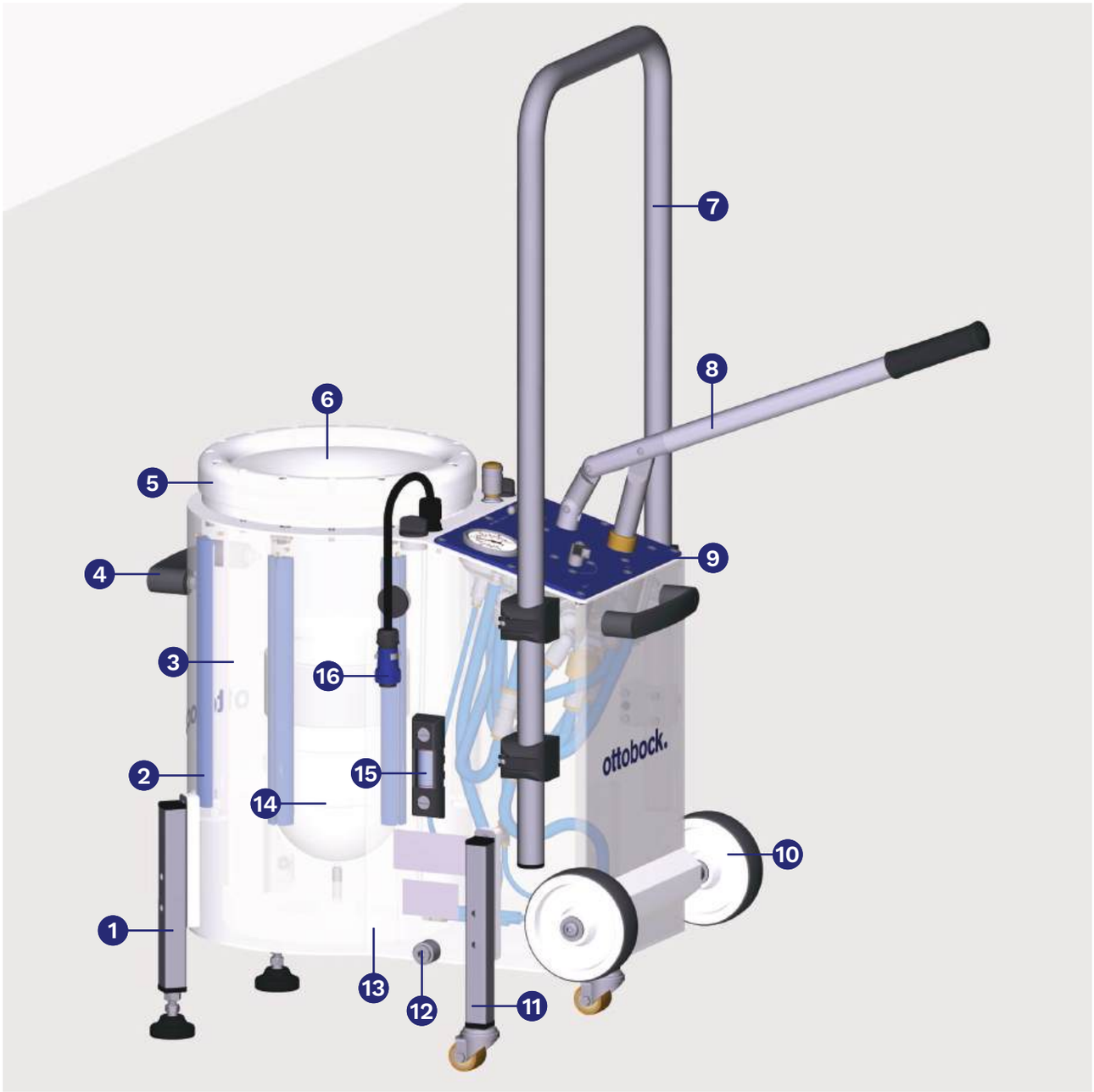
743G18=1-1

1. Two-pin earthed plug (type F)

743G18=1-4

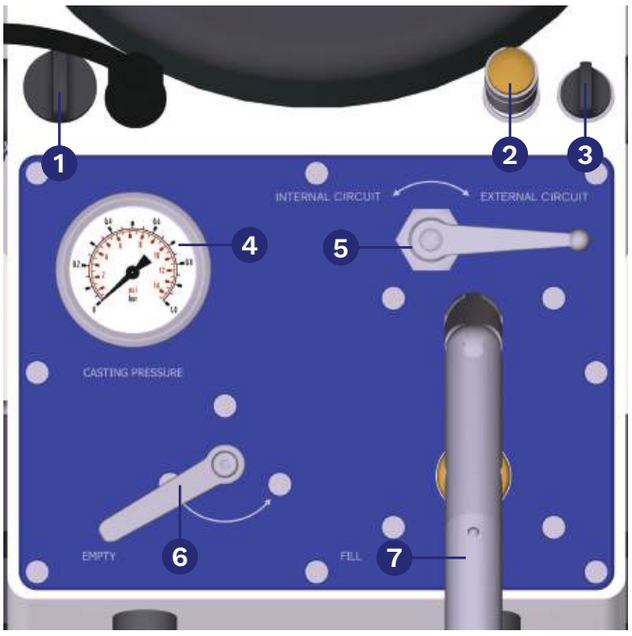
1. NEMA 5-15P plug

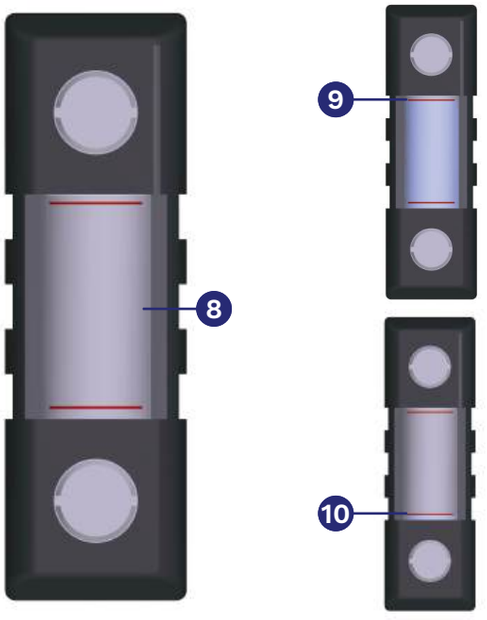
Component group overview (base unit)



1	Adjustment foot	9	Control panel
2	UV lamp units (6×)	10	Transport wheel
3	Pressure tank	11	Castor foot
4	Transport handle	12	Drain screw
5	Clamping rings	13	Storage tank
6	Membrane	14	Vector tower
7	Height-adjustable handle	15	Fill level indicator
8	Hand pump lever	16	Plug connector for control unit

Control and display elements (base unit)





1. Filling screw
2. Blind cover for hose coupling
3. Vent screw
4. Pressure gauge
5. INTERNAL CIRCUIT/EXTERNAL CIRCUIT control lever
6. EMPTY/FILL control lever
7. Hand pump lever
8. Fill level indicator
9. Maximum fill level
10. Minimum fill level

When the hand pump lever is depressed, water is pumped from the pump into the tank selected on the basis of the levers.

When the hand pump lever is pulled up, water is sucked into the pump from the tank selected on the basis of the levers.

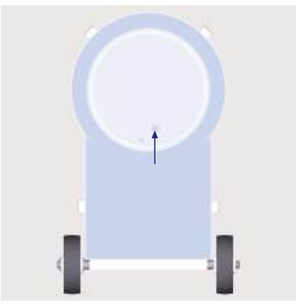
Function of combinations of lever positions

EXTERNAL CIRCUIT + EMPTY

If the control levers are set in this way, the water is pumped from the external tank into the storage tank.

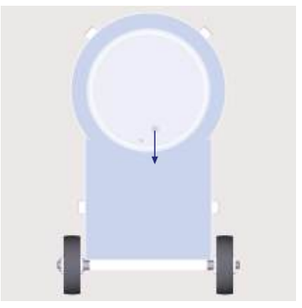
EXTERNAL CIRCUIT + FILL

If the control levers are set in this way, the water is pumped from the storage tank into an external tank.



INTERNAL CIRCUIT + FILL

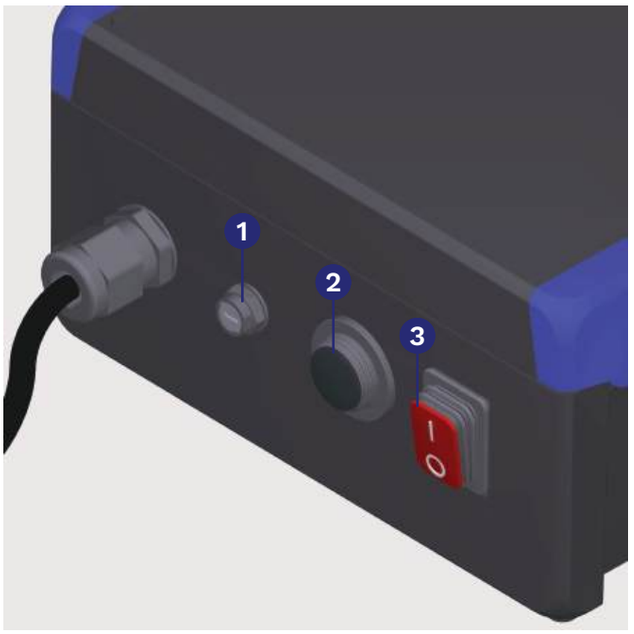
If the control levers are set in this way, the water is pumped from the storage tank into the pressure tank.



INTERNAL CIRCUIT + EMPTY

If the control levers are set in this way, the water is pumped from the pressure tank into the storage tank.

Control and display elements (control unit)



1. Fine fuse holder
2. Start button
3. Main switch

3 Safety-related information

WARNING!

Danger of death from electric shock due to contact between water and electrical components

- ► Avoid short circuits and electric shocks by only filling the storage tank with water up to the maximum fill level.
- ► Make sure that the overflow opening 1 is not closed or clogged.

CAUTION!

Risk of eye injury due to UV light

- ► Make sure that you and the user do not look at the UV light for a prolonged period.
- ► Apply the UV protection to the clamping rings and fix it in place with the hook-and-loop strap before the user steps into the pressure tank.

4 Technical data

Dimensions and weights	
Length (base unit)	466 mm
Width (base unit)	330 mm
Height (base unit)	526 mm
Weight (empty)	approx. 27 kg
Weight (with water)	approx. 50 kg

Electrical characteristics	
Voltage	100 – 240 V (AC)
Frequency	50 – 60 Hz
Power	400 W
Connection type	**743G18=1-1** Two-pin earthed plug (type F) **743G18=1-4** NEMA 5-15P plug
Fine fuse	T 2A L 250 V Article number: JAM-01.12.0004.0

Permissible environmental conditions	
Permissible temperature range (storage and transport – without water)	-10 °C – +30 °C
Permissible temperature range (storage and transport – with water)	+5 °C – +30 °C
Permissible temperature range (use)	+12 °C – +22 °C
Permissible relative humidity (storage, transport and use)	20 % – 70 %, non-condensing

INFORMATION

The table **Permissible user weight with regard to height adjustment of the base unit** shows the maximum user weight that can be loaded on the base unit depending on the height adjustment used. When fabricating a prosthetic socket with lumeo resin casting socks, only a height adjustment that does not exceed the permissible user weight for the relevant lumeo resin casting socks may be used (see table **Permissible user weight for lumeo resin casting socks**).

Permissible user weight with regard to height adjustment of the base unit	
Height	**Maximum weight**
0 mm (without feet)	170 kg
40 mm (with feet)	150 kg
75 mm (with feet)	130 kg
110 mm (with feet)	110 kg

Permissible user weight for prosthetic interim sockets made using Lumeo resin casting socks	
Article number and size	**Maximum weight**
699P1=1 (S)	125 kg
699P1=2 (M)	125 kg
699P1=3 (L)	125 kg
699P1=4 (XL)	125 kg

Maximum permissible wearing period for prosthetic interim sockets made using Lumeo resin casting socks
6 months

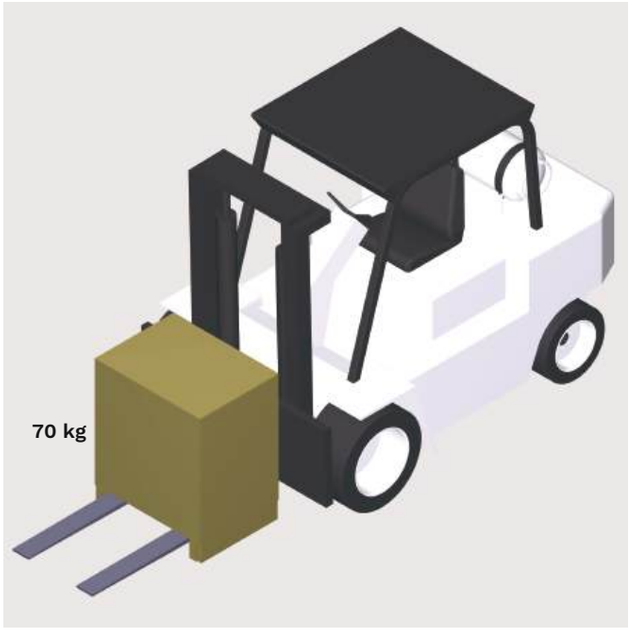
5 Transport

WARNING!

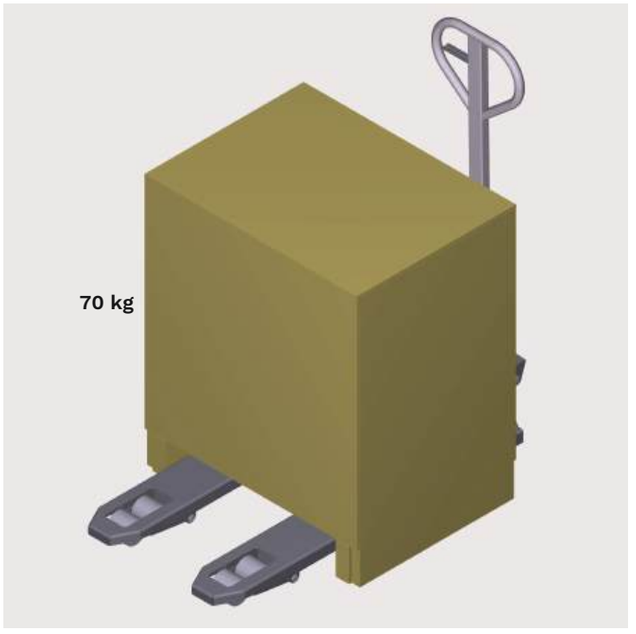
Death or extremely serious injury due to improper transportation

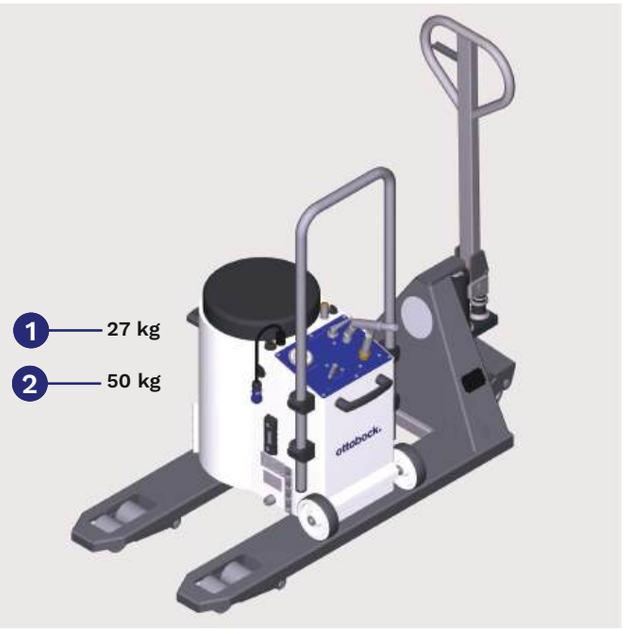
- ► Use a means of transport with a sufficient load capacity (e.g. forklift or pallet truck) for transportation and lifting.
- ► Make sure that no one is under suspended loads.
- ► Only transport the product in a transport crate after the pressure tank and storage tank have been completely emptied.
- ► Only transport the product in an upright position and avoid tipping over as glycerol oil may escape from the pressure gauge.

Transport with forklift



Transport with pallet truck

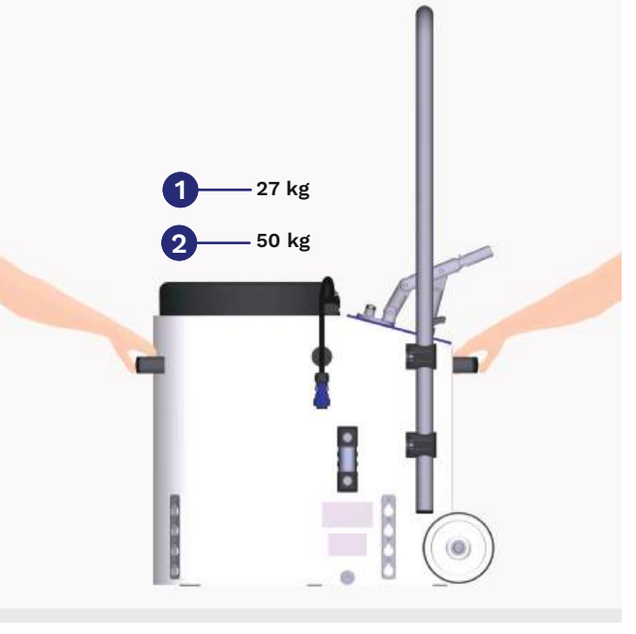




1 Weight without water
2 Weight with water

Transport with transport wheels and handle by one person/carrying with transport handles by two persons

1 Weight without water
2 Weight with water



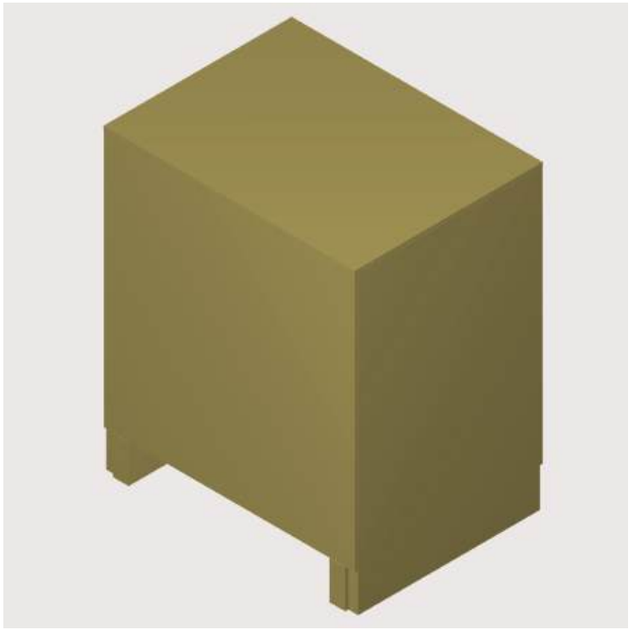
1 Weight without water
2 Weight with water

6 Storage

CAUTION!

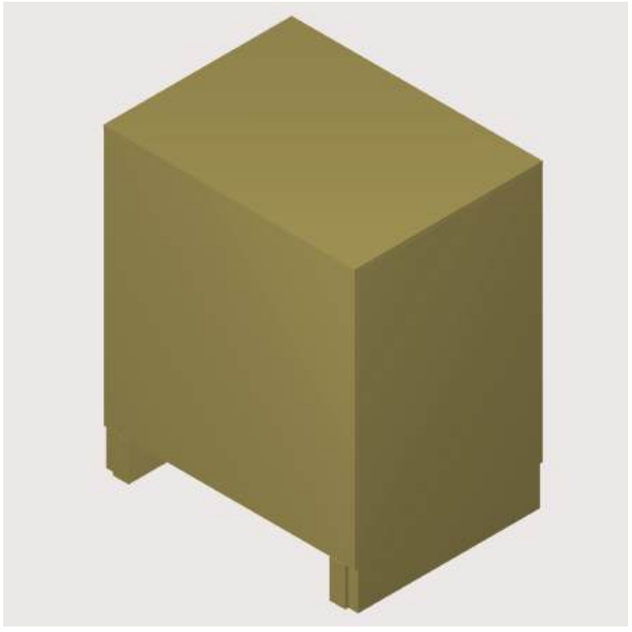
Product damage due to incorrect storage

- ► Observe the environmental conditions defined in the **Technical data** section for storage (see page 12).
- ► Protect the product from moisture and extreme temperature fluctuations.
- ► Leave the product in the transport crate or cover it with a protective film to protect it against contamination during storage.
- ► Fit the membrane protector for protection during storage.



1 Membrane protector

7 Unpacking and checking the delivered items



❶	Base unit	❿	Relief pads (4×)
❷	Membrane protector	⓫	Height adjustment discs, 30 mm (4×)
❸	Hose	⓬	Height adjustment discs, 60 mm (2×)
❹	Adjustment feet (2×)	⓭	Distal end cap
❺	Castor feet (2×)	⓮	Removal aid
❻	Handle	⓯	Set of test socks (1× each size: S, M, L, XL)
❼	Instructions for use (German)	⓰	Hand pump lever
❽	Instructions for use (English)	⓱	UV protection
❾	Receiving cups (4×)	⓲	Control unit

- ▶ Open the transport crate.
- ▶ Check the delivered items for completeness.
- ▶ Contact the manufacturer promptly in case of damage or missing parts.
- ▶ Store the packaging material for reuse or dispose of it in an environmentally friendly manner in accordance with the regulations of the country of use.

8 Use

8.1 Required materials, machines, tools and utensils

NOTICE!

Product damage due to the use of unsuitable materials

► Use the materials listed when using the product and fabricating the prosthetic socket. They have been selected with regard to the sensitivity of the membrane and usage with UV light, among other things.

Materials

Article number	Article designation
Used in the **Filling the storage tank and venting the pressure tank** section (see page 23)	
	Distilled water (20 litres)
Used in the **Protecting and caring for the membrane** section (see page 31)	
633F103=1	Plaster insulation grease
Used in the **Building up the layers of the prosthetic socket on the user's residual limb** section (see page 52)	
616F39=30000X300	Sealing film
642T6=350X500X0.25	Film bag
99B25	Stockinette
642F18	Stretch film
	For fabricating a prosthetic interim socket using lumeo resin casting socks
699P1=1	lumeo resin casting sock S – circumference (cm): 25–40
699P1=2	lumeo resin casting sock M – circumference (cm): 30–45
699P1=3	lumeo resin casting sock L – circumference (cm): 35–55
699P1=4	lumeo resin casting sock XL – circumference (cm): 40–65
	For fabricating a plaster cast
699G3=*	Cellona plaster bandages
699G9=*	Cellona plaster bandages
Used in the **Aligning the interim prosthesis** section (see page 65)	
636K49	SuperGlue
617H21=*	Orthocryl sealing resin
617P37=*	Hardening powder
639A1=1	Talcum powder
699G30=*	Cellacast Xtra casting tapes
Used in the **Replacing the membrane and pressure tank** section (see page 72)	
743Y958=1	Membrane
743Y976=1	Pressure tank (membrane with complete inner tank, clamping rings and screws)
617H46	1C silicone rubber
84V1	Vaseline
Used in the **Replacing the fine fuse** section (see page 80)	
JAM-01.12.0004.0	T 2A L 250 V fine fuse

Machines and tools

Article number	Article designation
Used in the **For vacuum prosthetic socket only: cutting the sealing film to size** (see page 51) and **Building up the layers of the prosthetic socket on the user's residual limb** (see page 52) sections	
	Scissors
Used in the **Fully curing the prosthetic socket without the user** (see page 63) and **Aligning the interim prosthesis** (see page 65) sections	
	Jigsaw with tools
	Oscillating saw with tools
	Milling machine with tools
	Sandpaper
Used in the **Aligning the interim prosthesis** section (see page 65)	
	Drill with tools
	Hot air gun
Used in the **Replacing the membrane and pressure tank** section (see page 72)	
	Torque wrench (2 Nm)

Utensils

Article number	Article designation
Used in the **Determining important user values** section (see page 38)	
743B1	Tailor's tape measure
662M1	Folding rule
Used in the **Building up the layers of the prosthetic socket on the user's residual limb** section (see page 52)	
642Y40	Stretch film dispenser (For easier dispensing of the stretch film)
641H46=*	Disposable glove, nitrile, black, with grip
Used in the **Aligning the interim prosthesis** section (see page 65)	
	Heat-resistant protective gloves (For shaping the prosthetic socket with a hot air gun)

8.2 Combination restrictions

Combination restrictions for prosthetic feet with a prosthetic socket made using lumeo resin casting socks

► **CAUTION!** To prevent the breakage of load-bearing components, observe the following additional combination restrictions in addition to the information in the instructions for use for the lamination anchor and prosthetic feet.

Prosthetic feet	
1E90, 1E91, 1E92, 1E93	Not permissible
1E95, 1G6	Up to 100 kg
1B1	Max. size: 25, max. 100 kg
1C60, 1C61, 1C62, 1C63, 1C64, 1C68	Max. size: 28, max. 100 kg
1S49, 1M10, 1C10, 1C11, 1E56, 1C50, 1C53	From size 26: max. 100 kg
1C30	From size 27: max. 100 kg
1S101, 1S102, 1S103	From size 28: max. 100 kg
1D10	From size 29: max. 100 kg

Lamination anchor	
4R63, 4R68, 4R100	Not permissible

Combination restrictions for liners when fabricating a prosthetic socket using lumeo resin casting socks

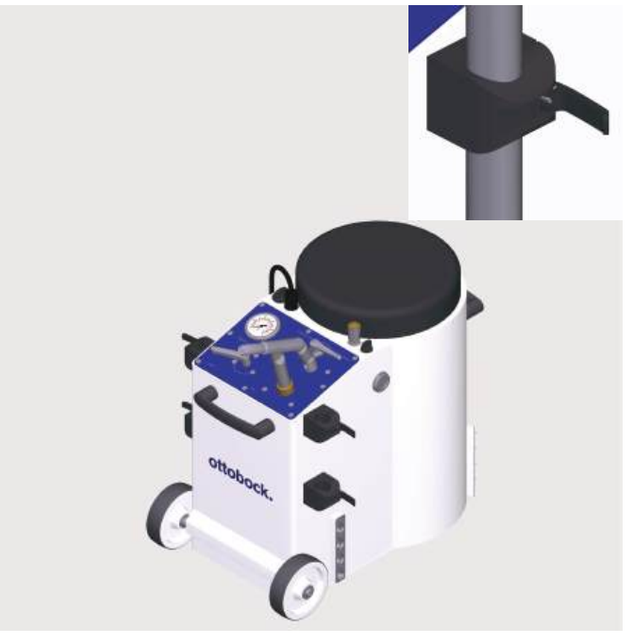
► **CAUTION!** To prevent burns due to high reaction temperatures caused by UV light, note the following combination restrictions for liners.

Liner	
Liner with textile cover	Permissible
Liner without textile cover (wall thickness < 6 mm)	Not permissible
Liner without textile cover (wall thickness ≥ 6 mm)	Permissible

► **NOTICE!** To prevent unwanted deformation of the liner (e.g. wall thickness too thin due to excessive reaction temperature and pressure while taking the impression in the base unit), note the following combination restrictions for liners.

Liner	
Thermoplastic liners (forming temperature ≥ 65 °C) (All Ottobock liners meet this criterion.)	Permissible
Thermoplastic liners (forming temperature 50 – 55 °C) (Check with the liner manufacturer.)	Not permissible

8.3 Attaching the handle



► Open the quick-release clamps on the 4 holders.

► Slide the handle through the 4 holders.

The illustration shows the handle in the upper holders only.

► **CAUTION!** Do not use this positioning – it is not permitted because there is a risk that the user will fall.

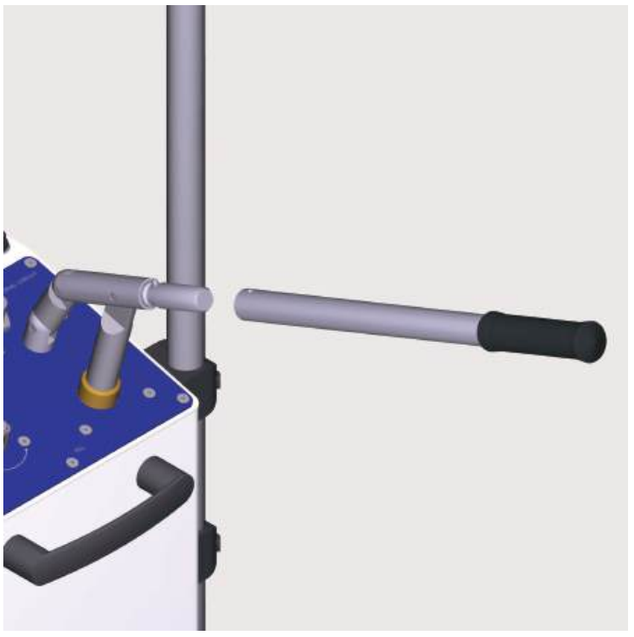
The illustration shows the highest position, so that the ends of the handle are securely seated in the lower holders.

► Close the quick-release clamps on the 4 holders.

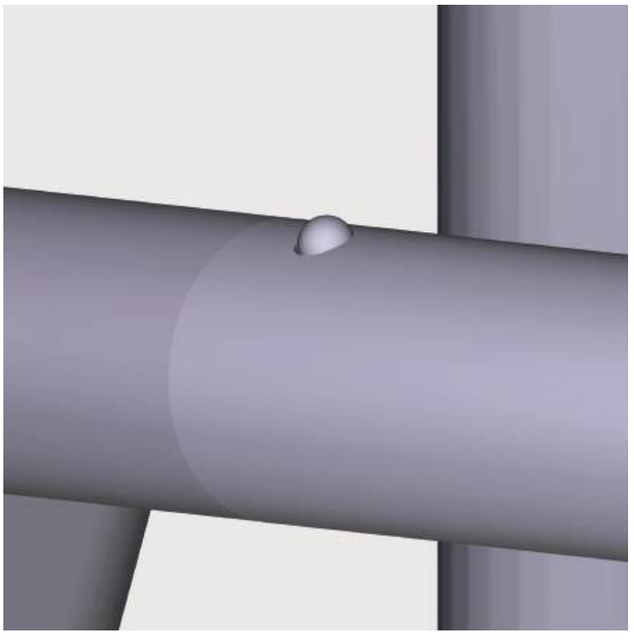
The illustration shows the lowest position, so that there is sufficient space between the two ends of the handle and the transport wheels.

► Close the quick-release clamps on the 4 holders.

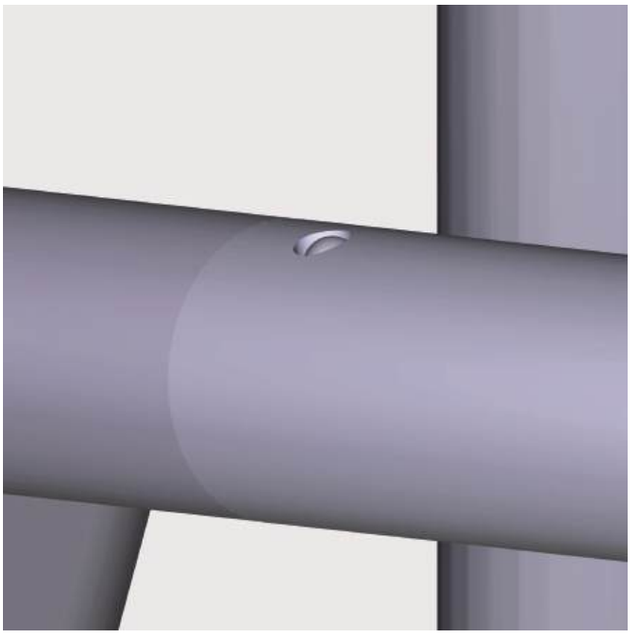
8.4 Attaching the hand pump lever



► Fit the hand pump lever.



► Check that the locking pin prevents the hand pump lever from being pulled off.



► To pull the hand pump lever off, press the locking pin down.

8.5 Filling the storage tank and venting the pressure tank

NOTICE!

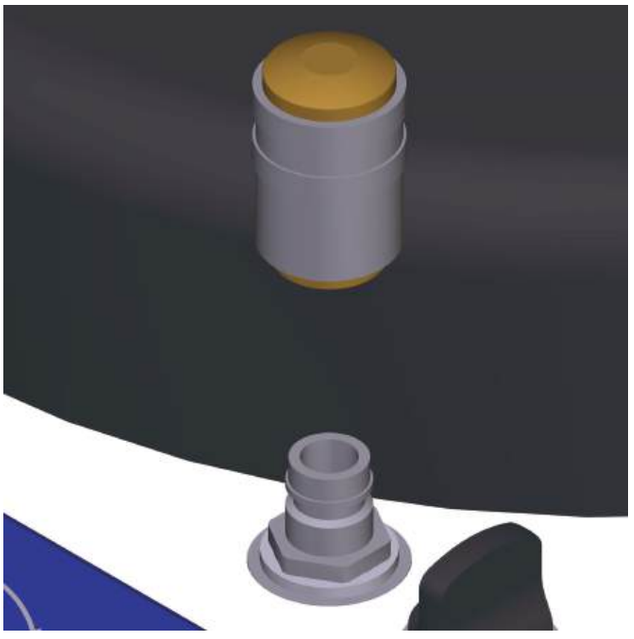
Damage to membrane and pressure tank due to the use of normal water

► Only use distilled water.

20 litres of distilled water are required for filling.

One of the following methods can be used for filling (**Filling the storage tank via the hose** or **Filling the storage tank via the filling screw**).

Filling the storage tank via the hose



► Remove the blind cover from the hose coupling.

► Connect the hose to the hose coupling.

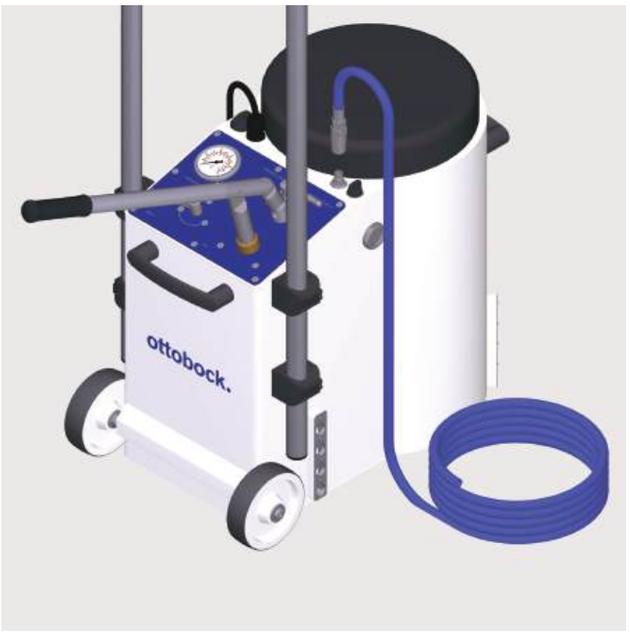
► Insert the hose into the canister and secure it against slipping out.

EXTERNAL CIRCUIT + **EMPTY**

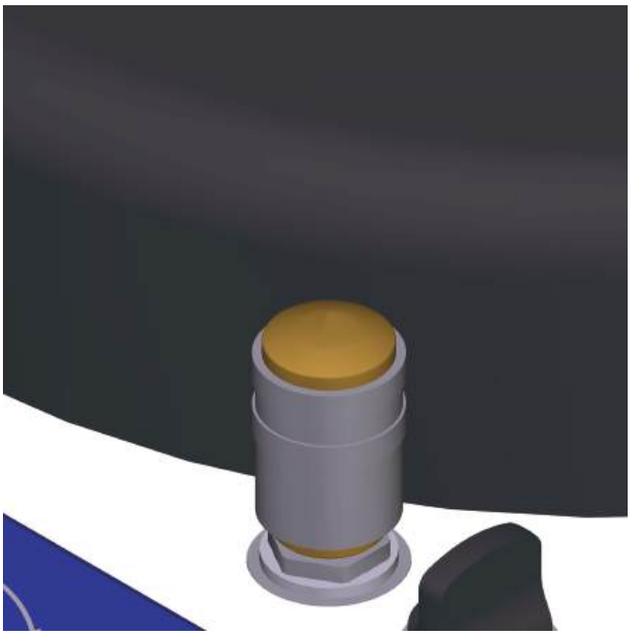
► Set the control levers to the positions shown.

► Pump with the hand pump lever.

► Stop pumping at the latest when the water level in the fill level indicator has reached the upper line for the maximum fill level.



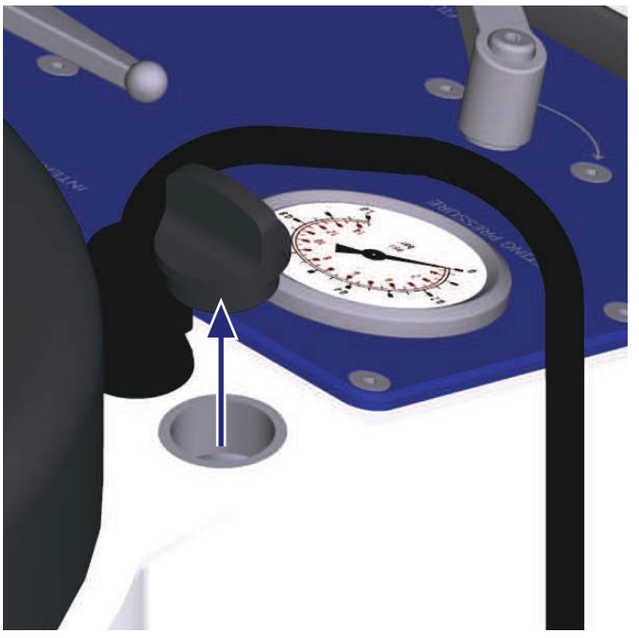
► After removing the canister, disconnect the hose from the hose coupling.



► Fit the blind cover on the hose coupling.
► Then continue with the instructions under the heading **Venting the pressure tank** in this section.

Filling the storage tank via the filling screw

► Pull the plug out of the clamp fixing and position it on the side.



► Unscrew the filling screw.

► Pour in the water through a funnel.

► Stop filling at the latest when the water level in the fill level indicator has reached the upper line for the maximum fill level.

► Fit the filling screw and tighten it.

► Insert the plug into the clamp fixing.
► Then continue with the instructions under the heading **Venting the pressure tank** in this section.

Venting the pressure tank

Venting is important because it ensures even pressure distribution while taking the impression. A suitable floor surface is required for venting as some water will escape during the process. As an option, you can place the base unit on a block approx. 10 cm high so that you do not have to hold it up.

INTERNAL CIRCUIT + **FILL**

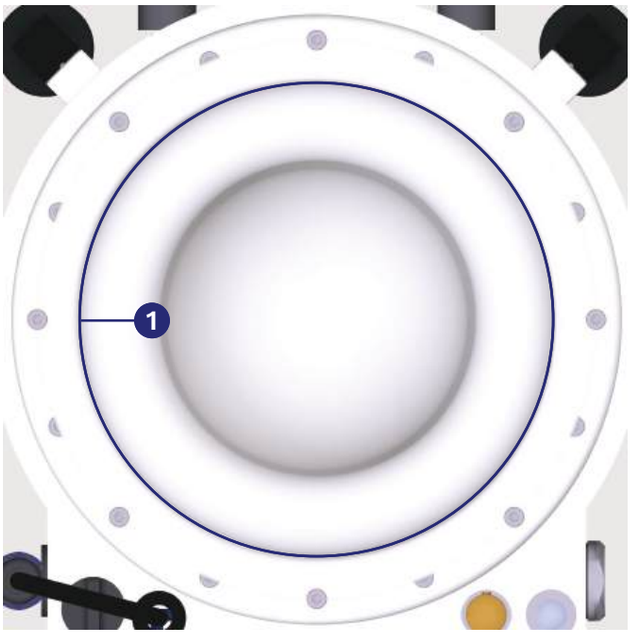
► Set the control levers to the positions shown.

► Unscrew the vent screw.

► Remove the membrane protector.

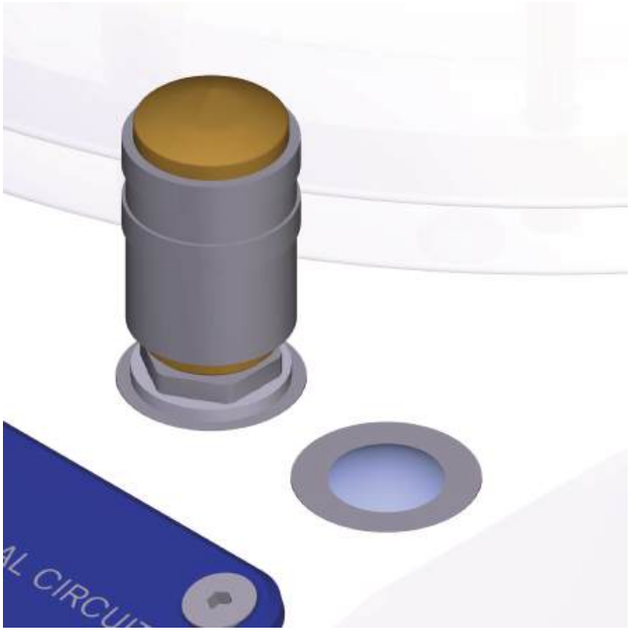
During subsequent pumping, the air is pumped through the vent hose of the pressure tank until it escapes through the opening of the vent screw.

► Pump with the hand pump lever.

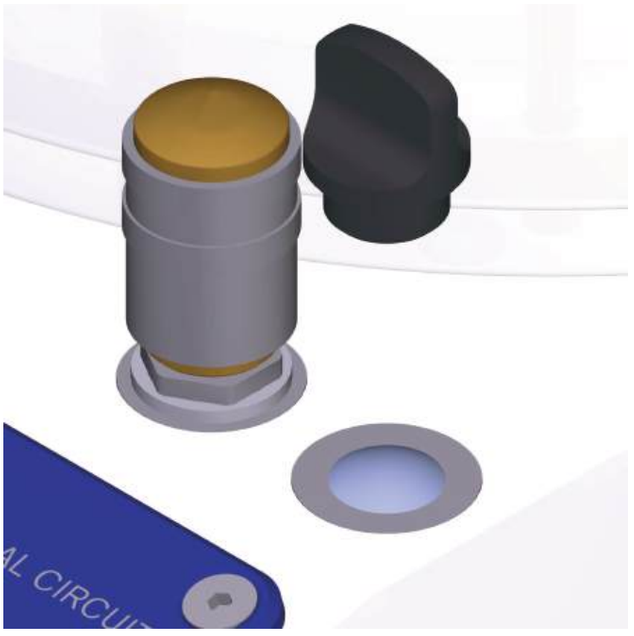


► Keep pumping until the water level reaches the edge of the upper clamping ring.

► Either place the operating side of the base unit on a block or lift it slightly during the subsequent pumping using the transport handle.



► Keep pumping until only water – without air bubbles – flows out of the opening of the vent screw.



► Fit the vent screw and tighten it.

► Wipe away any leaked water residue from the surface of the base unit and the floor with a cloth and allow to dry.

INTERNAL CIRCUIT + **EMPTY**

► Set the control levers to the positions shown.

The pressure tank is filled with water.

► Use the hand pump lever to pump the water.

► When the pressure tank is empty, stop pumping.

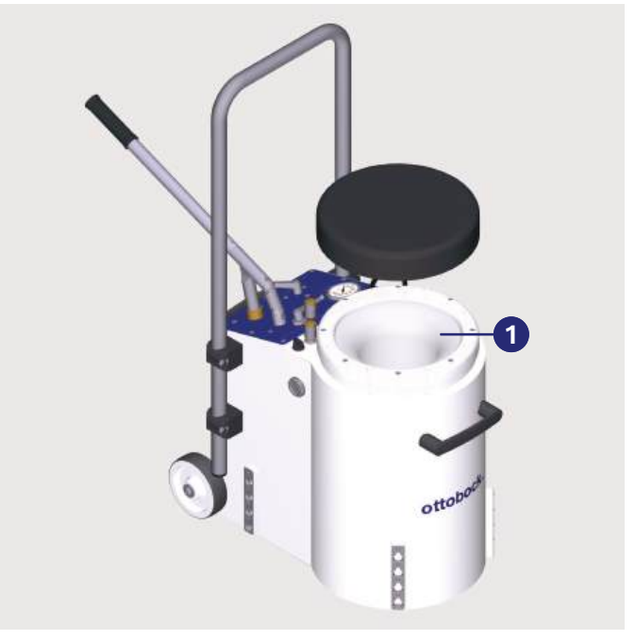
8.6 Protecting and caring for the membrane

NOTICE!

Destruction of the membrane due to inadequate treatment and care

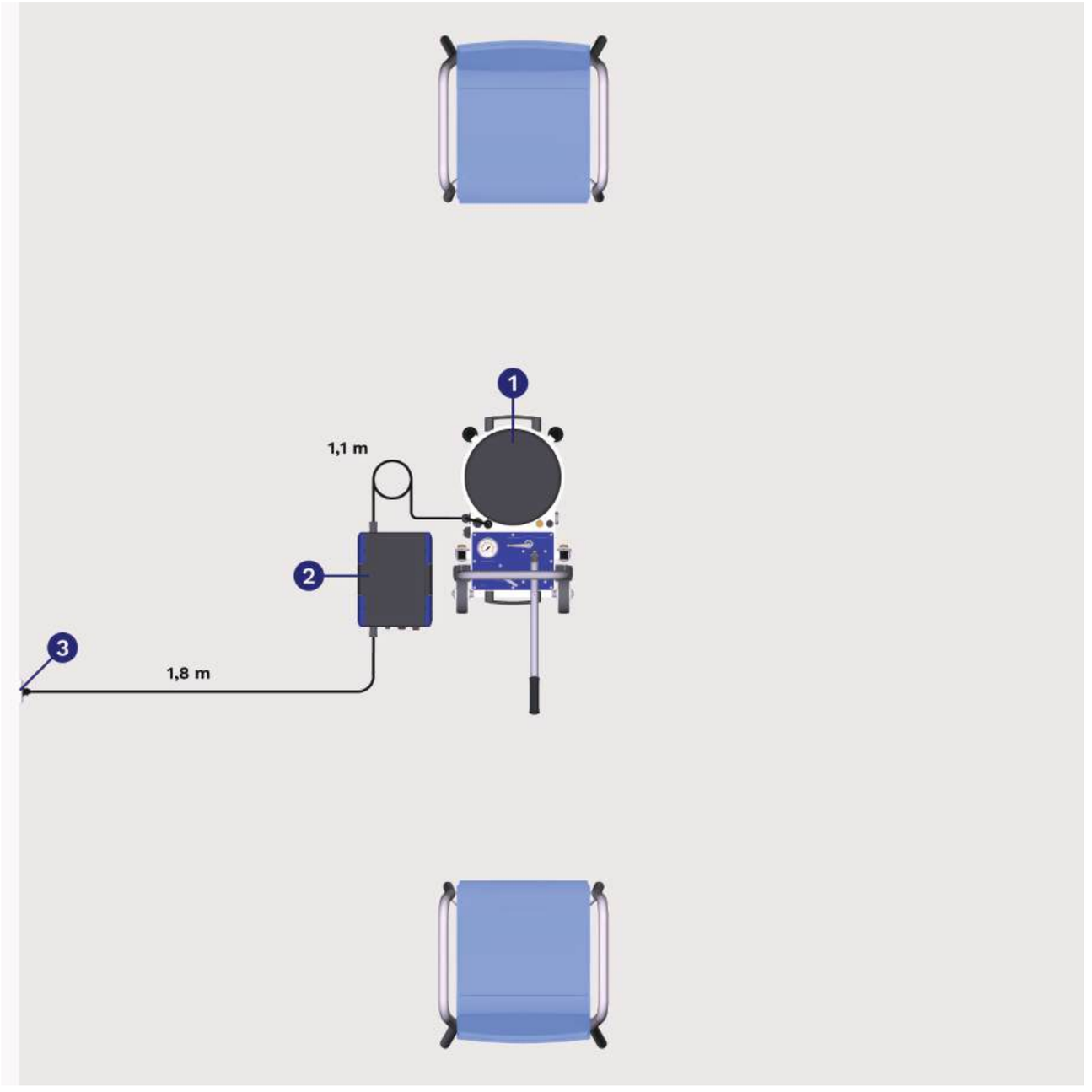
- ► Fit the membrane protector after each use.
- ► Protect the membrane from sharp-edged objects (e.g. jewellery, tools, prosthetic socket burrs) and dirt.
- ► Only treat the membrane with 633F103=1 plaster insulation grease.
- ► Check the membrane for soiling each time before applying grease. Carefully remove dirt particles from the membrane without pressing them into the membrane or brushing them heavily over the membrane surface.

1 Membrane protector



1 Membrane

8.7 Setting up the product

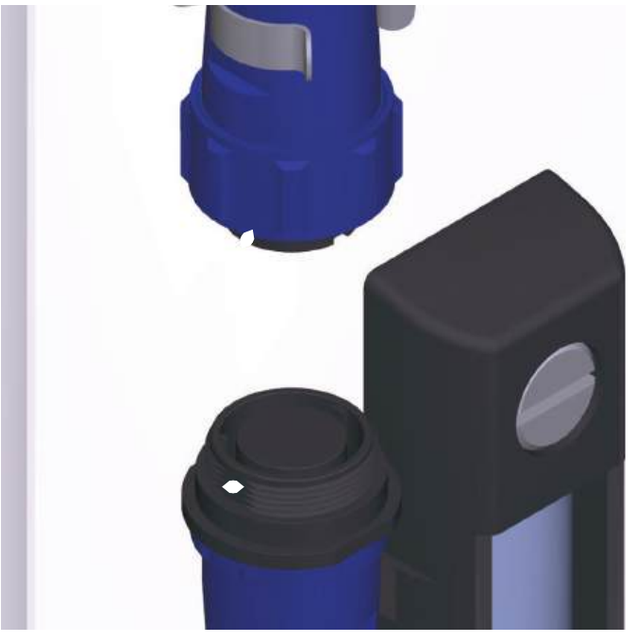


1	Base unit	3	Wall socket
2	Control unit		

The illustration shows one way of setting up the product. The cable lengths are indicated. If the cable length between the control unit 2 and the wall socket 3 is not sufficient, an extension cable approved according to the regulations in the country of use can be used.

8.8 Connecting the control box

Connecting the control unit to the base unit



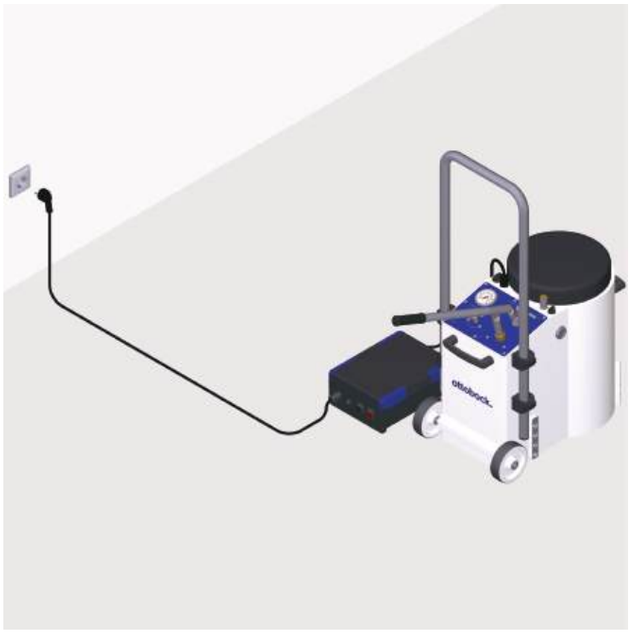
► Align the white dots on the plug and socket with each other before connecting them.

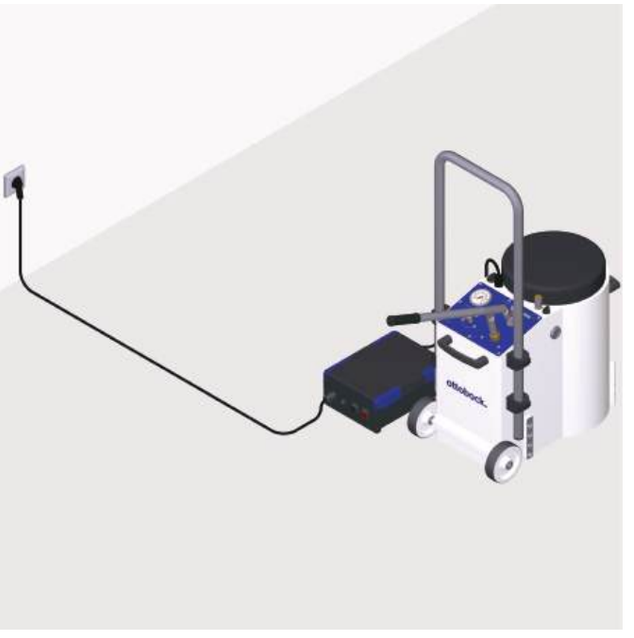
► Insert the plug of the base unit into the socket of the control unit.

► Secure the plug connection with the union nut of the plug.

Connecting the control unit to the wall socket

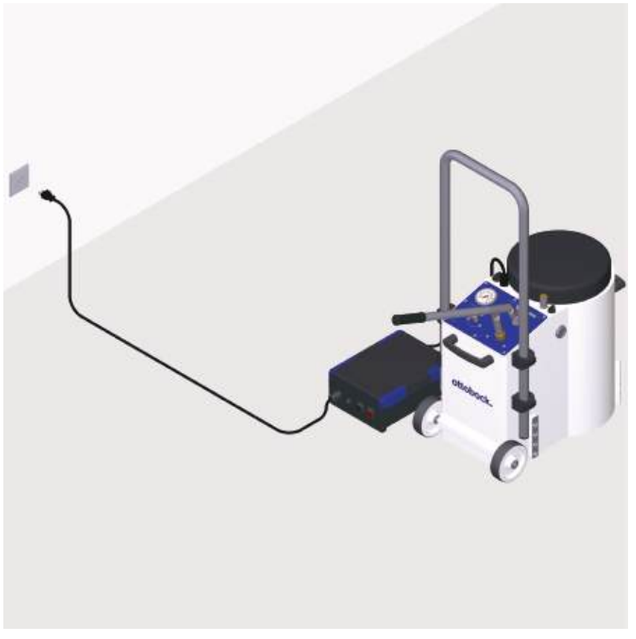
743G18=1-1

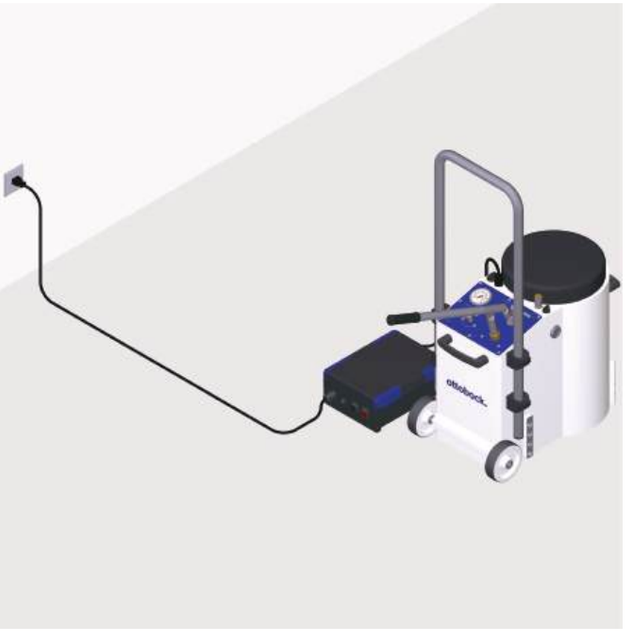




► Connect the plug to the wall socket.

743G18=1-4





► Connect the plug to the wall socket.

8.9 Fabricating the prosthetic interim socket/Fabricating a plaster cast

CAUTION!

Skin reactions (e.g. eczema, itching, burning sensation) upon contact with the surface of a hardened prosthetic socket made of lumeo resin casting socks due to sensitisation or allergy to acrylic monomers

- ► If you have sensitisation or allergy to acrylic monomers, use suitable protective measures (e.g. wear disposable gloves and suitable clothing) to avoid skin contact with the prosthetic interim socket during all fitting activities.
- ► Follow the instructions in this document closely to fabricate the prosthetic interim socket. This minimises the formation of acrylic monomers and largely removes acrylic monomer residues from the socket surface.
- ► Clarify with the user if they have been diagnosed with sensitisation or allergy to acrylic monomers.
- ► Note the absolute contraindications for the user.
- ► In case of unknown sensitisation or allergy to acrylic monomers, carry out an adequate hygiene procedure immediately after skin contact (e.g. washing thoroughly with soap and water or cleaning with a hygiene cloth containing a high water or ethanol content). This applies to qualified personnel and users.

Absolute contraindications for prosthetic interim sockets made of lumeo resin casting socks

- Known sensitisation or allergy to acrylic monomers

Fabricating the prosthetic interim socket

- ► Fabricate the prosthetic interim socket by working through the following subsections in the relevant order.

1. **Empty the pressure tank** (see page 36)
2. **Check the membrane for soiling** (see page 37)
3. **Determine important user values** (see page 38)
4. **Determine the optimum pressure** (see page 40)
5. **Determine the correct size for the resin casting socks** (see page 41)
6. **Adjust the height of the base unit for the user** (see page 42)
7. **Assemble the vector tower and insert it into the membrane** (see page 45)
8. **For vacuum prosthetic socket only: cut the sealing film to size** (see page 51)
9. **Build up the layers of the prosthetic socket on the user's residual limb** (see page 52)
10. **Cure the prosthetic socket with the user standing** (see page 58)
11. **Fully cure the prosthetic socket without the user** (see page 63)
12. **Aligning the interim prosthesis** (see page 65)

Fabricating a plaster cast

The main application of the product is the fabrication of a prosthetic interim socket with lumeo resin casting socks. The following sections contain all of the relevant information in this regard. Some of these sections can also be used for fabricating a plaster cast and are listed below.

- ► Fabricate the plaster cast by working through the following subsections in the relevant order.

1. **Empty the pressure tank** (see page 36)
2. **Check the membrane for soiling** (see page 37)
3. **Determine important user values** (see page 38)
4. **Determine the optimum pressure** (see page 40)
5. **Adjust the height of the base unit for the user** (see page 42)
6. **Assemble the vector tower and insert it into the membrane** (see page 45)
7. **Build up the layers of the prosthetic socket on the user's residual limb** (see page 52)
8. **Cure the prosthetic socket with the user standing** (see page 58)

8.9.1 Emptying the pressure tank

INTERNAL CIRCUIT + **EMPTY**

► Set the control levers to the positions shown.

► Use the hand pump lever to pump the water.

► Remove the membrane protector.

► When the pressure tank is empty, stop pumping.

8.9.2 Checking the membrane for soiling

- ▶ Check the membrane for soiling. Carefully remove dirt particles from the membrane without pressing them into the membrane or brushing them heavily over the membrane surface.
- ▶ Note that the membrane is only greased after inserting the vector tower. The distal end of the membrane which surrounds the vector tower must not be greased; only the area where the membrane surrounds the residual limb.

8.9.3 Determining important user values

User weight

► Determine the current user weight.

Mobility grade

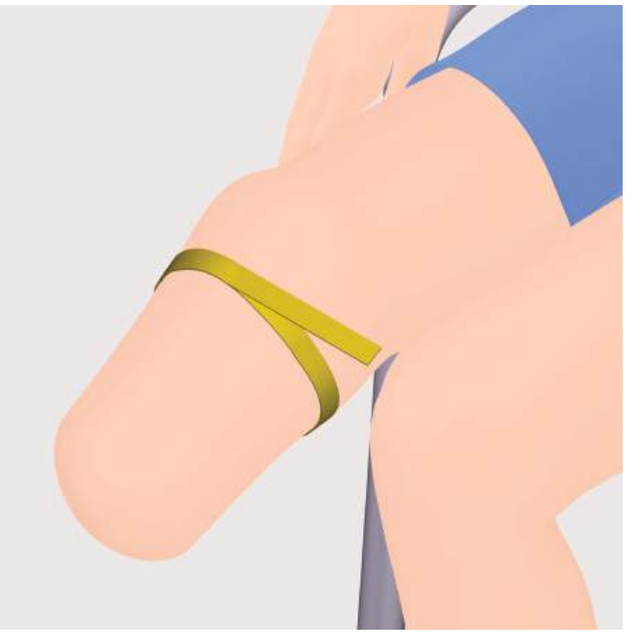
► Determine the current mobility grade.

Type of residual limb tissue

► Determine the current type of residual limb tissue (solid residual limb tissue, medium residual limb tissue, soft residual limb tissue).

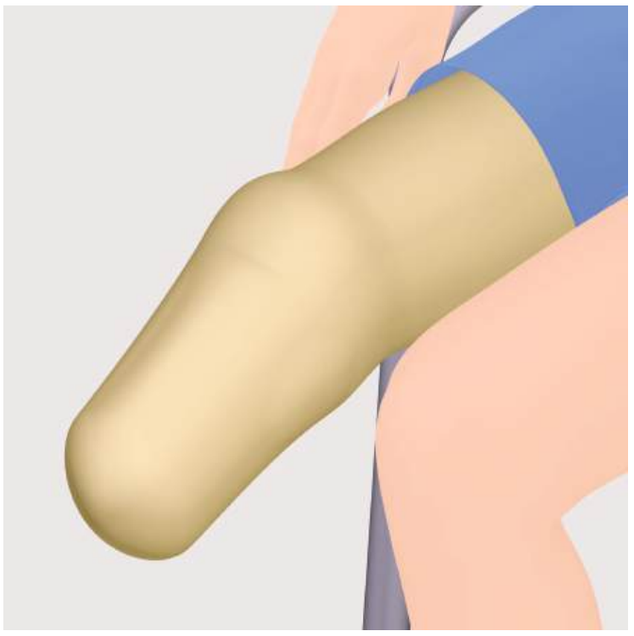
Circumference of the residual limb at the level of the MPT (MPT: mid-patellar tendon)

► Perform the measurement directly on the skin without a liner.

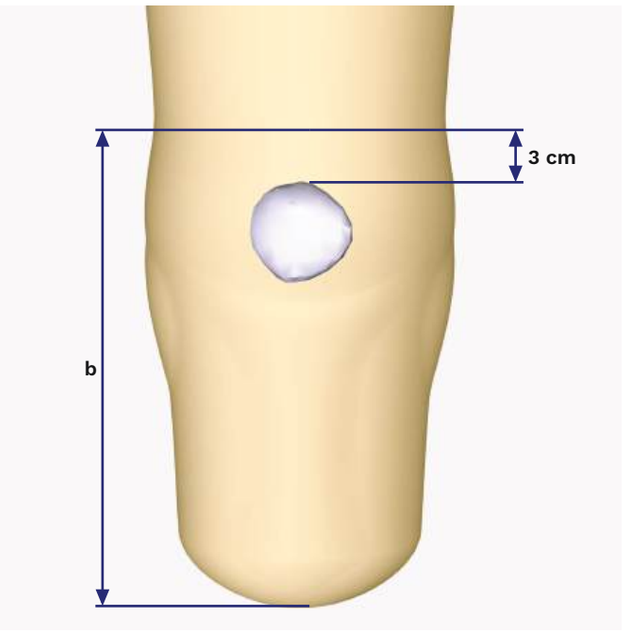


► Place the 743B1 tailor's tape measure around the circumference of the residual limb at the level of the MPT without constricting the tissue and measure the circumference of the residual limb.

Residual limb length in the area of the prosthetic socket



► Perform the measurement with the liner.



► Measure the residual limb length **b** from the distal end of the residual limb to 3 cm above the patella using a folding rule (e.g. 662M1).

8.9.4 Determining the optimum pressure

② Circumference of residual limb at the MPT level mm	① User weight kg 30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125
280	0,41	0,48	0,55	0,62	0,69	0,76	0,83	0,90												
290	0,39	0,45	0,52	0,58	0,64	0,71	0,77	0,84	0,90											
300	0,36	0,42	0,48	0,54	0,60	0,66	0,72	0,78	0,84	0,90										
310	0,34	0,39	0,45	0,51	0,56	0,62	0,68	0,73	0,79	0,85	0,85									
320	0,32	0,37	0,42	0,48	0,53	0,58	0,64	0,69	0,74	0,79	0,85	0,90								
330	0,30	0,35	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95						
340	0,28	0,33	0,38	0,42	0,47	0,52	0,56	0,61	0,66	0,70	0,75	0,80	0,84	0,89	0,94					
350	0,27	0,31	0,35	0,40	0,44	0,49	0,53	0,58	0,62	0,66	0,71	0,75	0,80	0,84	0,89	0,93				
360	0,25	0,29	0,33	0,38	0,42	0,46	0,50	0,54	0,59	0,63	0,67	0,71	0,75	0,79	0,84	0,88	0,92			
370		0,28	0,32	0,36	0,40	0,44	0,48	0,51	0,55	0,59	0,63	0,67	0,71	0,75	0,79	0,83	0,87	0,91		
380		0,26	0,30	0,34	0,38	0,41	0,45	0,49	0,53	0,56	0,60	0,64	0,68	0,71	0,75	0,79	0,83	0,86	0,90	0,94
390			0,29	0,32	0,36	0,39	0,43	0,46	0,50	0,53	0,57	0,61	0,64	0,68	0,71	0,75	0,78	0,82	0,86	0,89
400			0,27	0,30	0,34	0,37	0,41	0,44	0,47	0,51	0,54	0,58	0,61	0,64	0,68	0,71	0,75	0,78	0,81	0,85
410			0,26	0,29	0,32	0,35	0,39	0,42	0,45	0,48	0,52	0,55	0,58	0,61	0,65	0,68	0,71	0,74	0,77	0,81
420				0,28	0,31	0,34	0,37	0,40	0,43	0,46	0,49	0,52	0,55	0,58	0,61	0,65	0,68	0,71	0,74	0,77
430				0,26	0,29	0,32	0,35	0,38	0,41	0,44	0,47	0,50	0,53	0,56	0,59	0,62	0,65	0,67	0,70	0,73
440				0,25	0,28	0,31	0,34	0,36	0,39	0,42	0,45	0,48	0,50	0,53	0,56	0,59	0,62	0,64	0,67	0,70
450					0,27	0,29	0,32	0,35	0,37	0,40	0,43	0,46	0,48	0,51	0,54	0,56	0,59	0,62	0,64	0,67
460					0,26	0,28	0,31	0,33	0,36	0,38	0,41	0,44	0,46	0,49	0,51	0,54	0,56	0,59	0,61	0,64
470						0,27	0,29	0,32	0,34	0,37	0,39	0,42	0,44	0,47	0,49	0,52	0,54	0,56	0,59	0,61
480						0,26	0,28	0,31	0,33	0,35	0,38	0,40	0,42	0,45	0,47	0,49	0,52	0,54	0,56	0,59
490							0,27	0,29	0,32	0,34	0,36	0,38	0,41	0,43	0,45	0,47	0,50	0,52	0,54	0,56
500							0,26	0,28	0,30	0,33	0,35	0,37	0,39	0,41	0,43	0,46	0,48	0,50	0,52	0,54
510							0,25	0,27	0,29	0,31	0,33	0,35	0,38	0,40	0,42	0,44	0,46	0,48	0,50	0,52
520								0,26	0,28	0,30	0,32	0,34	0,36	0,38	0,40	0,42	0,44	0,46	0,48	0,50
530								0,25	0,27	0,29	0,29	0,33	0,35	0,37	0,39	0,41	0,42	0,44	0,46	0,48
540									0,26	0,28	0,30	0,32	0,33	0,35	0,37	0,39	0,41	0,43	0,45	0,46
550									0,25	0,27	0,29	0,30	0,32	0,34	0,36	0,38	0,39	0,41	0,43	0,45
560										0,26	0,28	0,29	0,31	0,33	0,35	0,36	0,38	0,40	0,41	0,43
570										0,25	0,27	0,28	0,30	0,32	0,33	0,35	0,37	0,38	0,40	0,42
580											0,26	0,27	0,29	0,31	0,32	0,34	0,35	0,37	0,39	0,40

► Calculate the pressure value according to the user data as shown based on the example.
The following user data is used in the example:
User weight = 90 kg, residual limb circumference = 360 mm, mobility grade 3, medium residual limb tissue

	Example	**User**
Value from table based on user weight ① and residual limb circumference ② at the MPT level	0.75 bar	_.__ bar
Mobility grade 1 (- 0.02 bar)		_ _.__ bar
Mobility grade 2 (+ 0.00 bar)		_ _.__ bar
Mobility grade 3 (+ 0.02 bar)	+ 0.02 bar	_ _.__ bar
Mobility grade 4 (+ 0.04 bar)		_ _.__ bar
Solid residual limb tissue (+ 0.00 bar)		_ _.__ bar
Medium residual limb tissue (+ 0.02 bar)	+ 0.02 bar	_ _.__ bar
Soft residual limb tissue (+ 0.04 bar)		_ _.__ bar
Result for the pressure	**0.79 bar**	**_.__ bar**

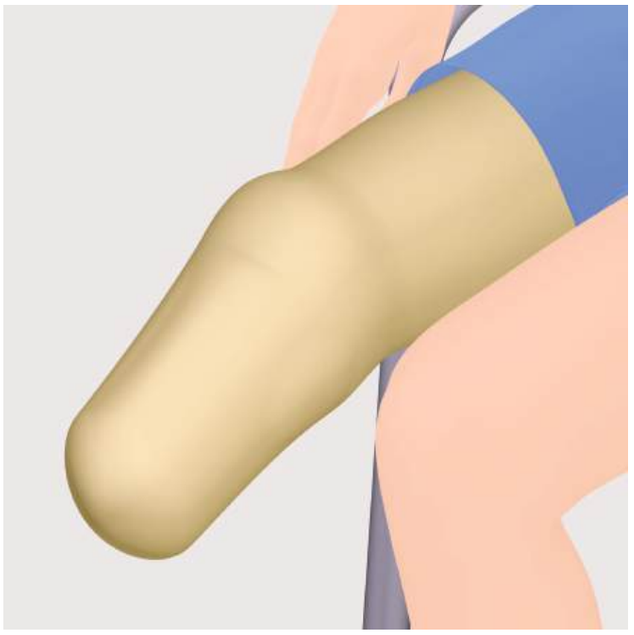
The result for the pressure is a non-binding guideline. It serves as a starting point when beginning to use the product. As you gain more experience, this will help you to determine the optimum pressure more effectively.

► If the user reacts sensitively to the applied pressure, reduce the pressure as little as possible. If this does not help, the user cannot be treated with hydronetic lumeo.

8.9.5 Determining the correct size for the resin casting socks

Size chart for the resin casting socks			
Size	**Circumference (cm)**	**Article number**	**Article designation**
S	25–40	699P1=1	lumeo resin casting sock S
M	30–45	699P1=2	lumeo resin casting sock M
L	35–55	699P1=3	lumeo resin casting sock L
XL	40–65	699P1=4	lumeo resin casting sock XL

The scope of delivery for the product includes the 743Y959=1 set of test socks. The set includes one test sock each in the sizes S, M, L and XL.

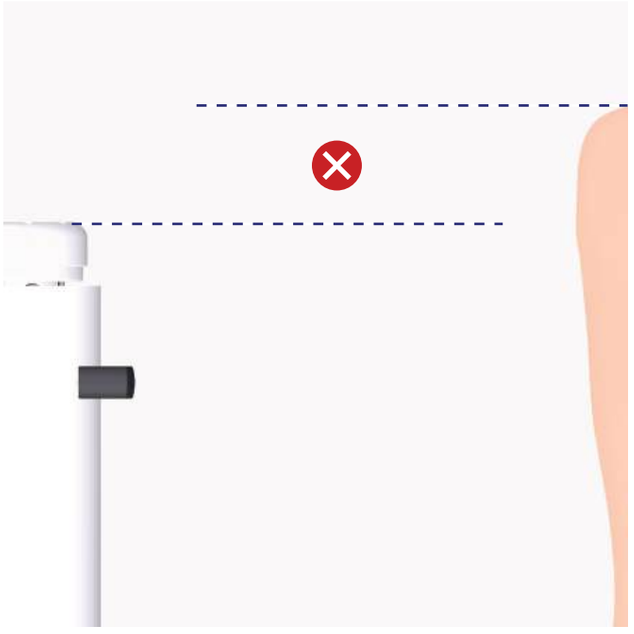


Determine the correct size for the resin casting socks with a liner. To select the size of the test sock, the smallest and largest residual limb circumference can be measured in the planned socket area.

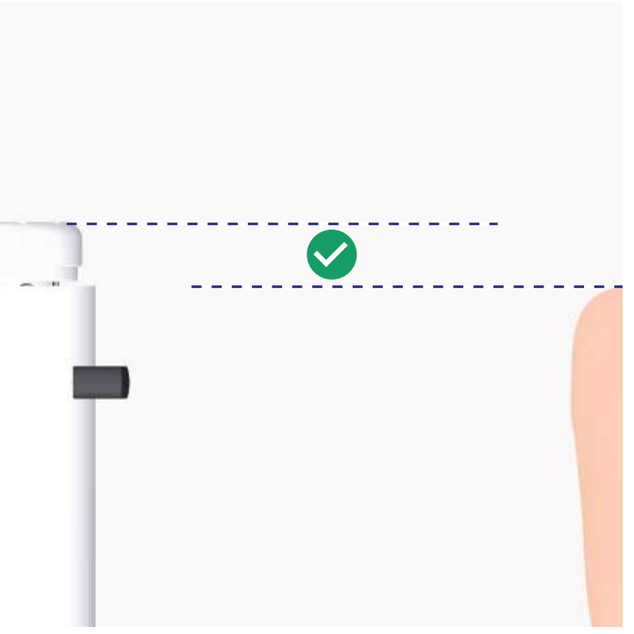
► Based on the size chart for the resin casting socks, select an appropriate test sock and put it on. If necessary, put on a different test sock to see whether it fits better. If two sizes fit, using the larger size may allow for better handling.

The article number of the corresponding resin casting sock is stated on the label on the distal seam.

8.9.6 Adjusting the height of the base unit for the user

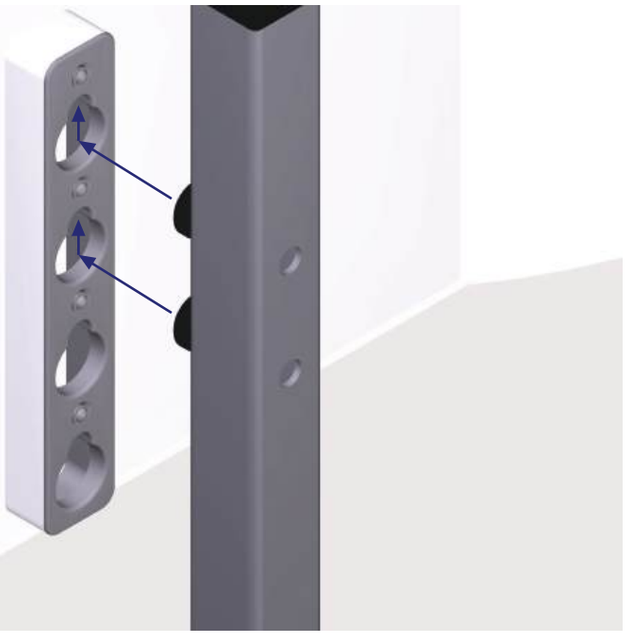


If the extended line of the top of the thigh is higher than the extended line of the top of the upper clamping ring when the user is seated, the base unit must be set higher by at least this height difference.

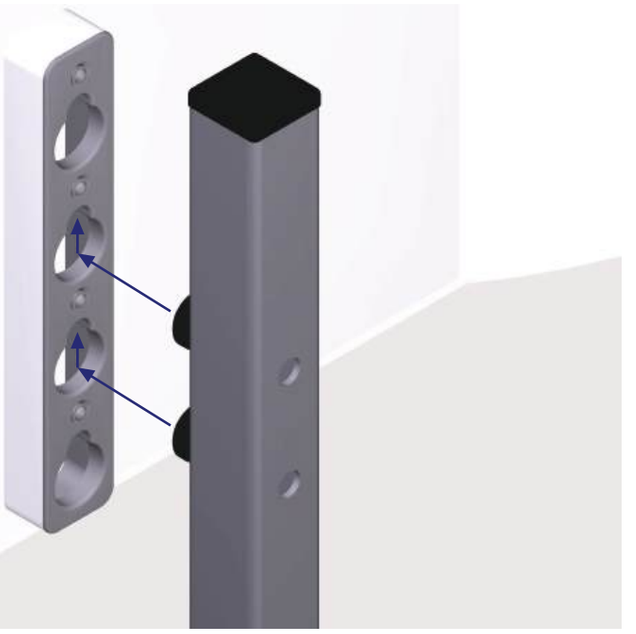


The extended line of the top of the thigh should be equal to or slightly lower than the extended line of the top of the upper clamping ring. This makes it easier to stand and to switch from one leg to the other.

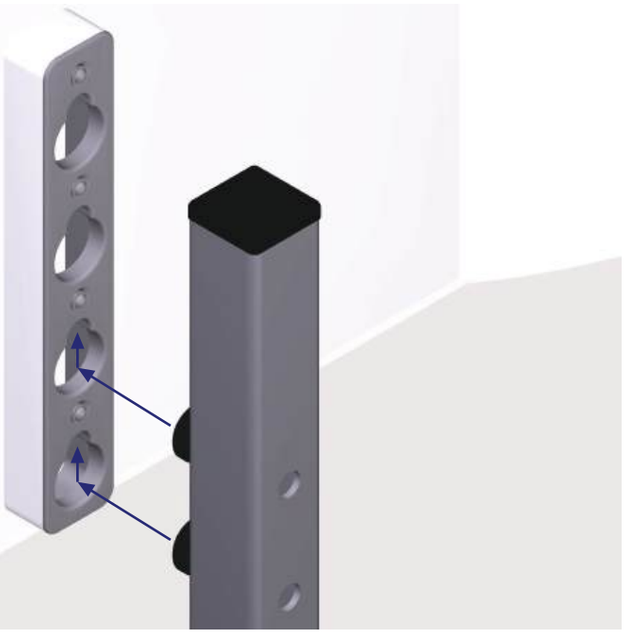
► **INFORMATION:** The following illustrations show the maximum user weight for the illustrated increase in the height of the base unit. If the user weighs more than the specified maximum user weight for the height increase, it must not be implemented. Furthermore, the maximum permissible user weight for the resin casting socks must not be exceeded.
If the base unit needs to be set higher, select the most suitable option for the user from the options below according to the height difference in the preceding illustrations and the user's weight.



130 kg
+ 75 mm



110 kg
+ 110 mm



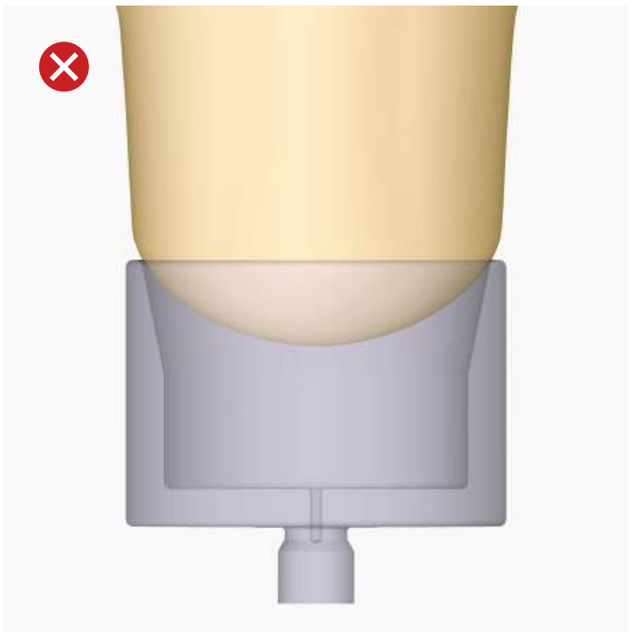
If using the feet is not possible due to the user's weight, the base unit can be placed on a load-bearing element (e.g. wooden boards) with the required height.

When feet are attached to the base unit, the castor feet can be used for positioning in relation to the user. However, they may not be used for transport purposes.

8.9.7 Assembling the vector tower and inserting it into the membrane

The vector tower consists of the relief pad, the receiving cup, the height adjustment discs and the distal end cap. The user stands in the pressure tank while the prosthetic socket is curing, touches the relief pad of the vector tower and is supported primarily by the water pressure.

Selecting the receiving cup



- ► When making the selection, use the liner and do not use the relief pad.
- ► Always start with the smallest receiving cup.

Receiving cup is too small

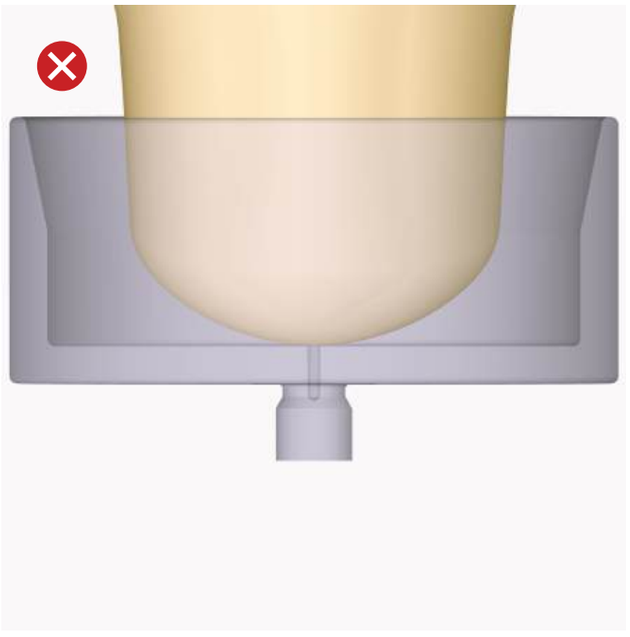
The residual limb must touch the bottom of the receiving cup without being compressed by the side edges. The illustration shows that the receiving cup does not meet this requirement. This receiving cup must not be used.

Receiving cup is the right size

The residual limb must touch the bottom of the receiving cup without being compressed by the side edges. The illustration shows that the receiving cup meets this requirement. This receiving cup must be used because it is the smallest suitable receiving cup.

Receiving cup is too large

The residual limb must touch the bottom of the receiving cup without being compressed by the side edges. The illustration shows that the receiving cup meets this requirement. This receiving cup must not be used as it is not the smallest suitable receiving cup.



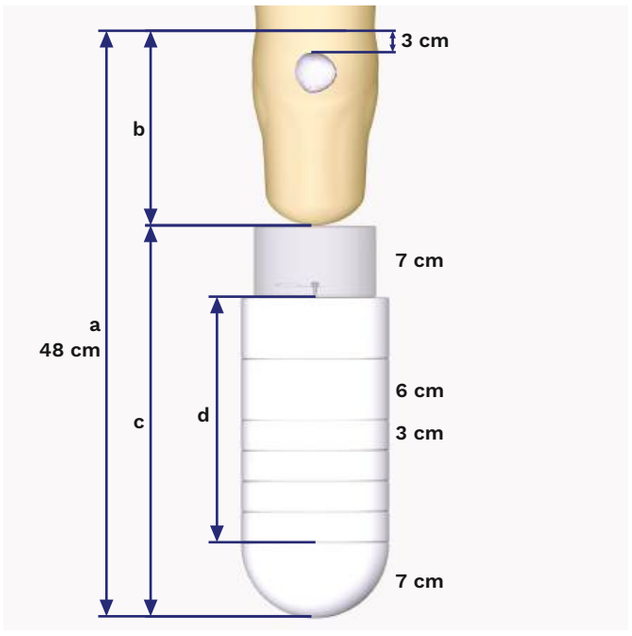
Receiving cup is much too large

The residual limb must touch the bottom of the receiving cup without being compressed by the side edges. The illustration shows that the receiving cup meets this requirement. This receiving cup must not be used as it is not the smallest suitable receiving cup.

Selecting the relief pad

- ▶ Always use the relief pad that fits perfectly into the receiving cup.

Selecting the height adjusters for the vector tower



Important dimensions when selecting the height adjusters

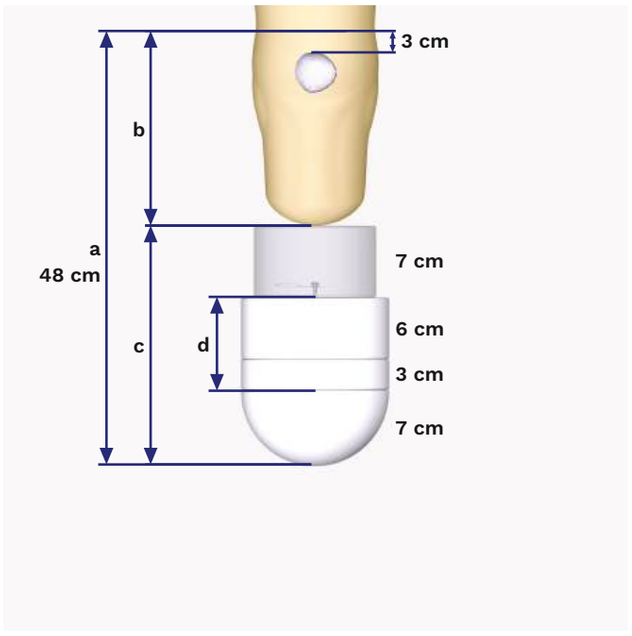
a: Overall height for calculation (48 cm)

b: Residual limb height from the distal end of the residual limb to 3 cm above the patella

c: Height of the vector tower, i.e. the height of all height adjusters from the lower end of the distal end cap to the upper edge of the receiving cup

If you subtract 14 cm from **c** for the distal end cap and the receiving cup, you get height **d** as the dimension for the height adjustment discs. To calculate the number of height adjustment discs (3 cm) required, **d** is divided by 3. In the case of decimal numbers, round down so that the user does not stand too high.

As an alternative to carrying out the full calculation, the vector tower can be assembled by means of measuring (e.g. with a measuring tape or folding rule).



Example 1

b = 25 cm

d = a - b - 14 cm

d = 48 cm - 25 cm - 14 cm = **9 cm**

9 : 3 =**3** height adjustment discs (3 cm)

Example 2

b = 23 cm

d = a - b - 14 cm

d = 48 cm - 23 cm - 14 cm = **11 cm**

11 : 3 = **3** (rounded down) height adjustment discs (3 cm)

Rather than 3 height adjustment discs measuring 3 cm each, the illustration shows one 6 cm height adjustment disc and one 3 cm height adjustment disc. This is also possible as an alternative to 3 height adjustment discs measuring 3 cm each.

Inserting the vector tower into the membrane

The pressure tank must be completely emptied as described in the **Emptying the pressure tank** section (see page 36).

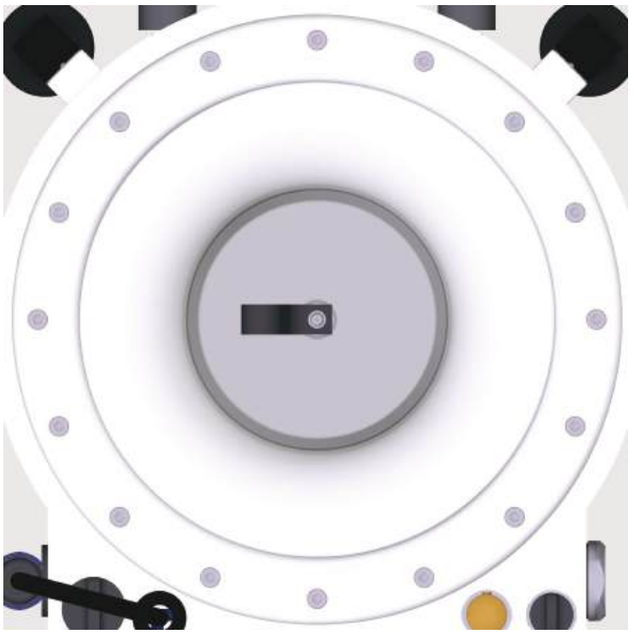
► Centre the vector tower in the emptied pressure tank.

► Pump with the hand pump lever.

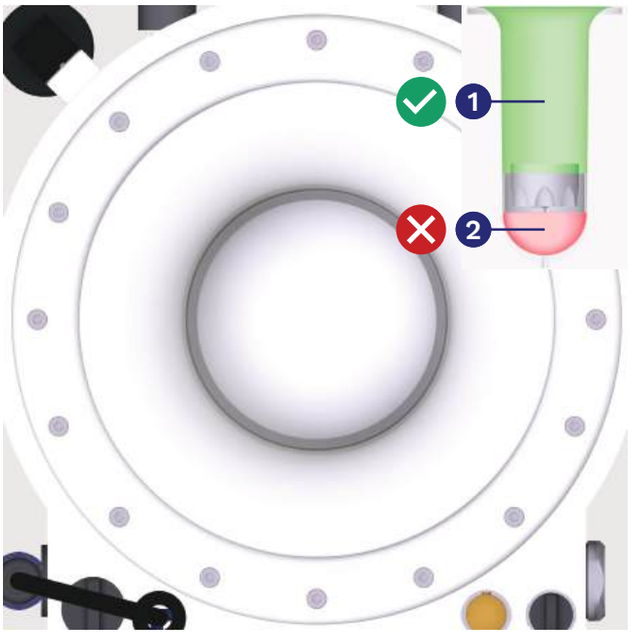
INTERNAL CIRCUIT + **FILL**

► Set the control levers to the positions shown.

► Continue pumping slowly when the membrane encloses the distal end cap.



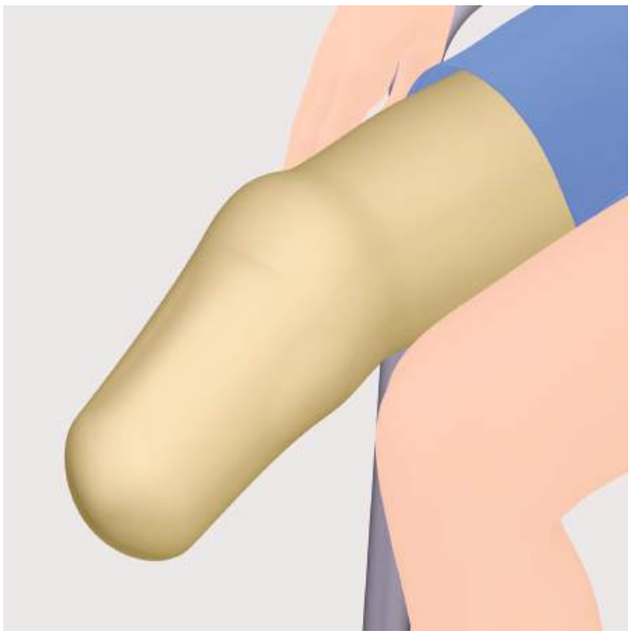
► When the membrane encloses the receiving cup, stop pumping.



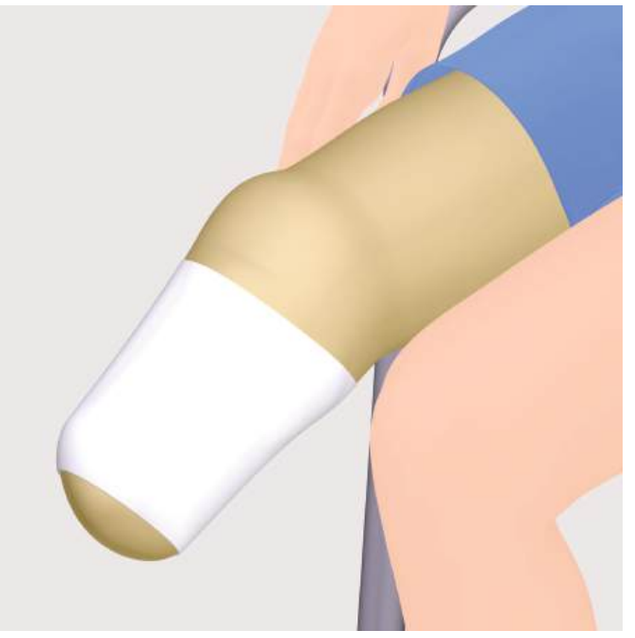
► Place the relief pad in the receiving cup.

► Apply 633F103=1 plaster insulation grease by hand (wearing disposable gloves) to the membrane area ❶ above the receiving cup to create an even grease film. Do not grease the distal area ❷ of the membrane that touches the distal end cap.

8.9.8 For vacuum prosthetic socket only: cutting the sealing film to size



The user wears a liner.



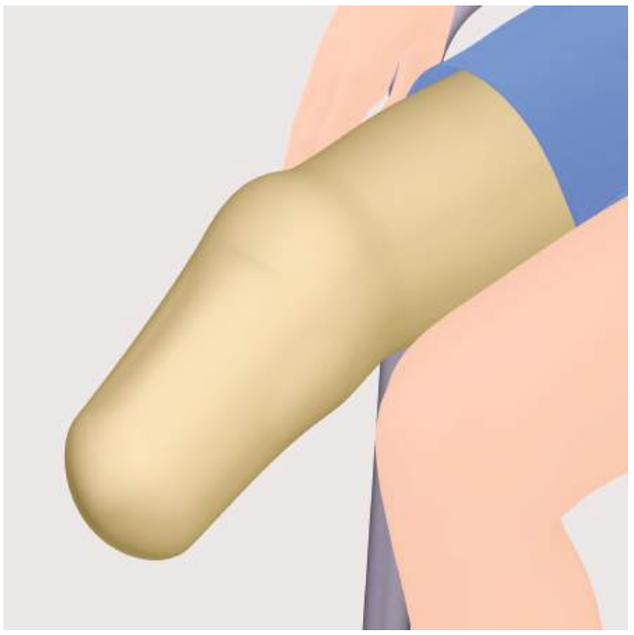
- ▶ Cut a piece of 616F39=30000X300 sealing film to size using scissors and adjust it so that, when placed around the residual limb with a 3 cm overlap in circumference, it is the correct size to serve as a sealing layer in the vacuum prosthetic socket.

8.9.9 Building up the layers of the prosthetic socket on the user's residual limb

INFORMATION

Taking user needs into account during treatment

- ► Inform the user about the treatment process [see **Building up the layers of the prosthetic socket on the user's residual limb** (see page 52) and **Curing the prosthetic socket with the user standing** (see page 58) sections].
- ► For users who have an increased sensitivity to pain or who may not be able to stand in the base unit for the required time during curing, carry out a test run. To do this, have the user stand in the base unit with only a liner and the 642T6=350X500X0.25 film bag on the residual limb in line with the instructions in the **Curing the prosthetic socket with the user standing** section (see page 58) and follow the remaining instructions without switching on the UV light.
- ► If the user does not complete the test run, do not carry out treatment with the hydronetic lumeo.
- ► If the test run is completed successfully, continue to pay attention to the user's needs during treatment by responding immediately if pain occurs due to water pressure or heat, or if the user lacks the strength to keep standing.



The user wears a liner.

► Position the 743Y962=1 removal aid from the patella upwards.

► Wrap the area from the 743Y962=1 removal aid to the end of the residual limb with 642F18 stretch film, avoiding any wrinkles.

► Pull the 99B25 nylon stockinette on.

► Wrap the area from the 743Y962=1 removal aid to the end of the residual limb with 642F18 stretch film, avoiding any wrinkles. The wrapping can be used for shaping and compression of soft tissue.

► Optional: On the film, use a felt-tip pen to draw a mark 3 cm above the patella on the front and then transfer it as a lateral mark. This mark is then used later as a control mark – drawn onto the final stretch film wrapping layer – when curing the prosthetic socket with the user standing.

Only when fabricating a plaster cast

► **INFORMATION:** When creating the plaster cast, use cold water to slow the curing speed as it will take time to position the user in the base unit.
Create a cast around the residual limb, wrapped in stretch film, as usual. Use Cellona plaster bandages (699G3=*/699G9=*) to do this.

► **NOTICE!** Then pull the 642T6=350X500X0.25 foil bag over it, taking care not to contaminate the outside with plaster, so that the membrane of the base unit does not become soiled or damaged.

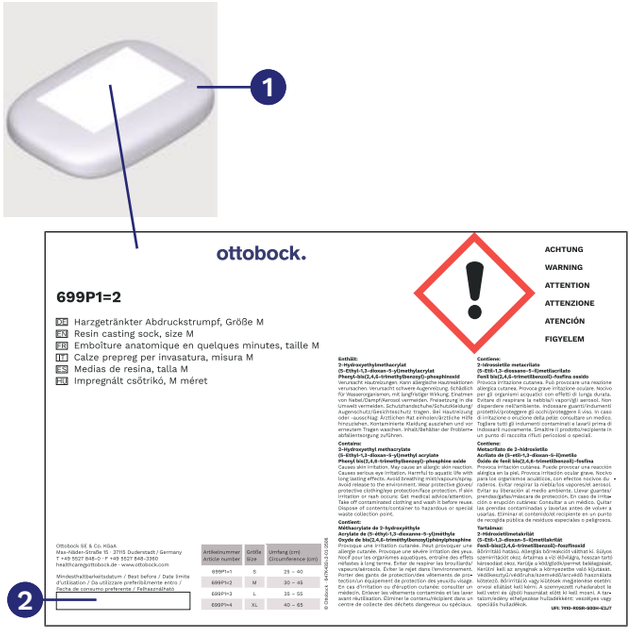
► To cure the plaster cast, continue with the **Curing the prosthetic socket with the user standing** section (see page 58).

Putting on the resin casting socks

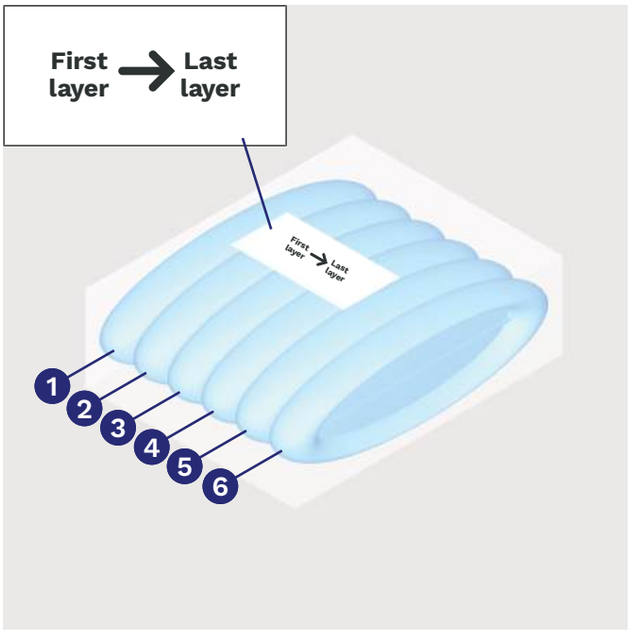
CAUTION!

Risk of injury, skin damage and damage to the prosthetic socket if the instructions for the resin casting socks are not followed

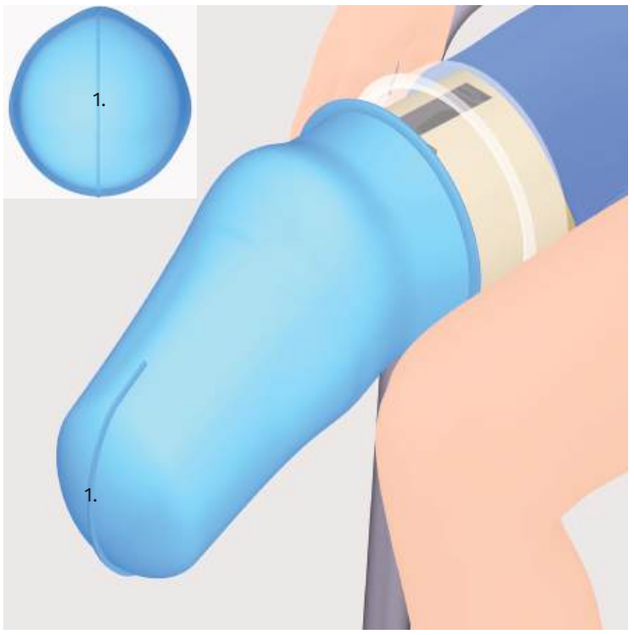
- ► Note the information about the lumeo resin casting socks under the headings **Permissible user weight for lumeo resin casting socks** and **Permissible environmental conditions** in the **Technical data** section (see page 12).
- ► Make sure the resin casting socks do not come into direct contact with fire and heat sources.
- ► Observe the safety notes on the packaging and in the safety data sheet for the resin casting socks in order to protect yourself and the user.
- ► Large accumulations of resin will lead to very high reaction temperatures under UV irradiation and can therefore cause burns. After putting on each resin casting sock, check whether the resin is evenly distributed in it. Even out any uneven resin distributions. Finally, move any excess resin from the distal end toward the cuff of the resin casting sock.
- ► During transport and storage, make sure the packaging of the resin casting socks is not damaged as this will render them unusable.
- ► Make sure the resin of the resin casting socks does not come into contact with your skin or that of the user.
- ► When putting on the resin casting socks, make sure that the seams do not lie directly in line with each other – they should only cross at approximately a 90° angle. This is to prevent the material becoming too thick and stopping the prosthetic socket from curing properly. Follow the instructions for putting on each layer.



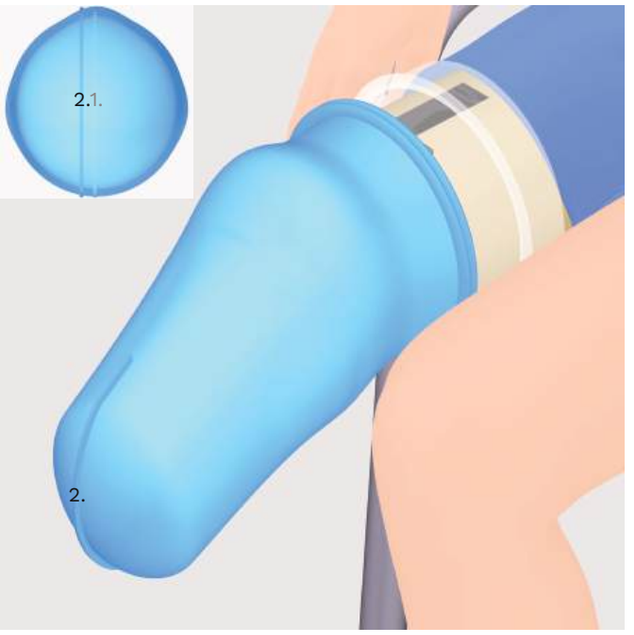
- ► Do not use the resin casting socks if the expiration date 2 on the packaging 1 has passed.
- ► Carefully cut open the packaging at the side without damaging the inner packaging.



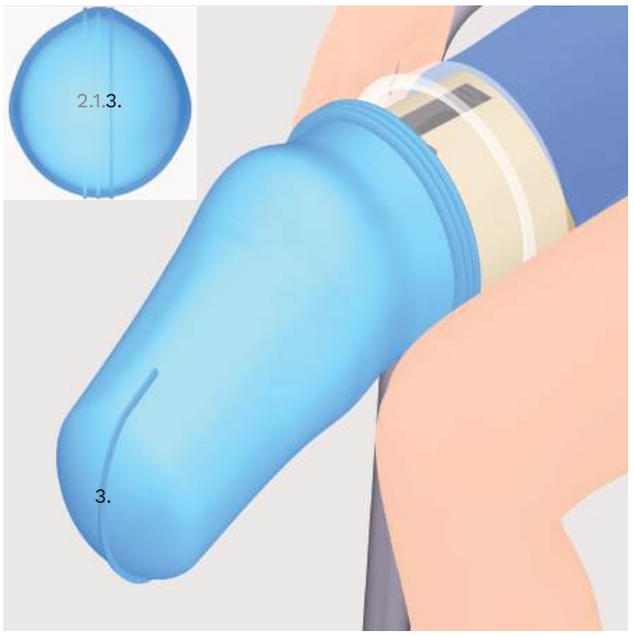
- ► Follow the specified sequence when putting on the resin casting socks.
- ► Put on the 641H46=* disposable gloves. Wearing two layers is recommended when fabricating a vacuum prosthetic socket so it is easier to apply the sealing film after removing the upper layer of gloves.
- ► Cut open the inner packaging on 3 sides and open it up.



► Position the vertical seam of the first resin casting sock so it is centred on the end of the residual limb and pull the resin casting sock over the residual limb.

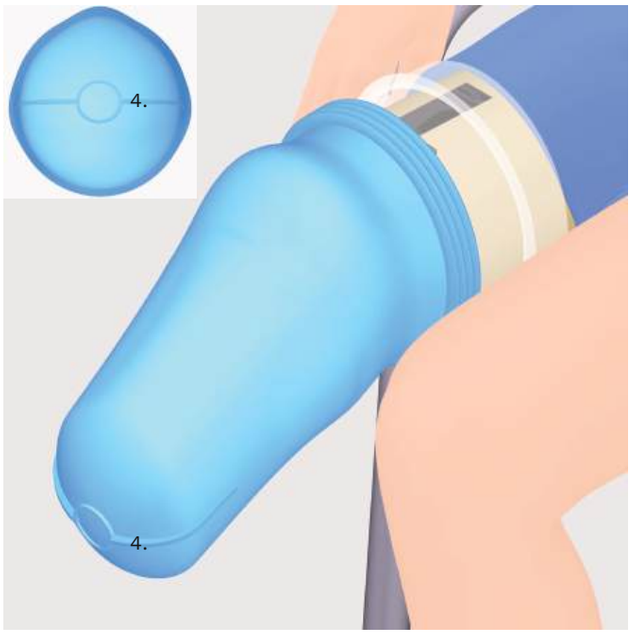


► Position the vertical seam of the second resin casting sock slightly to the left of the centre on the end of the residual limb and pull the resin casting sock over the residual limb.



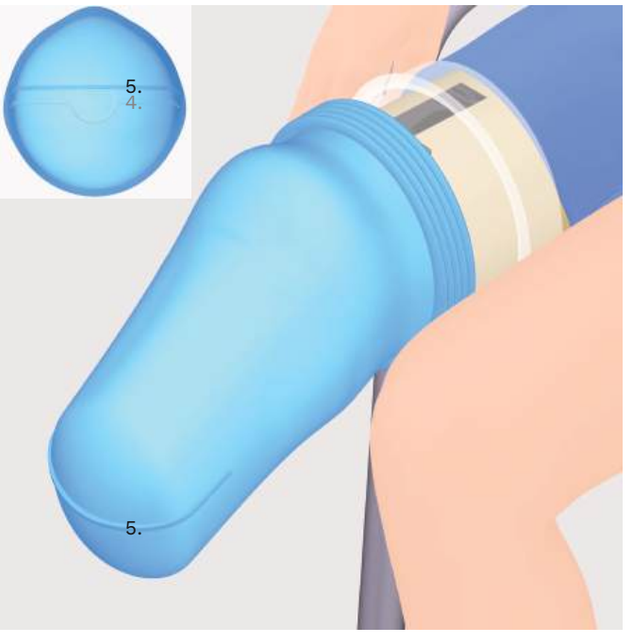
► Position the vertical seam of the third resin casting sock slightly to the right of the centre on the end of the residual limb and pull the resin casting sock over the residual limb.

► For vacuum prosthetic socket only: place the prepared piece of 616F39=30000x300 sealing film around the circumference with a 3 cm overlap.

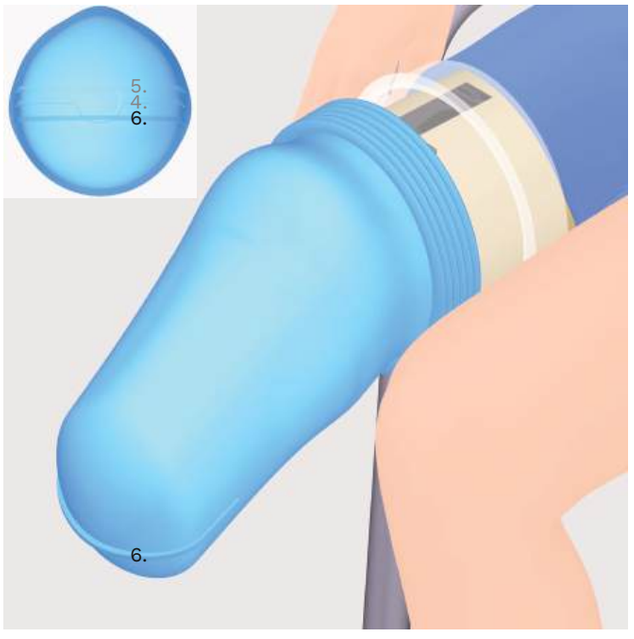


The hole in the fourth resin casting sock indicates the change of alignment of the seams from vertical to horizontal.

- ▶ Position the horizontal seam of the fourth resin casting sock so it is centred on the end of the residual limb and pull the resin casting sock over the residual limb.



- ▶ Position the horizontal seam of the fifth resin casting sock slightly above the centre on the end of the residual limb and pull the resin casting sock over the residual limb.



- ▶ Position the horizontal seam of the sixth resin casting sock slightly below the centre on the end of the residual limb and pull the resin casting sock over the residual limb.

- ▶ Wrap the area from the end of the residual limb to the 743Y962=1 removal aid with 642F18 stretch film, avoiding any wrinkles.
- ▶ Optional: On the film, use a pen to draw a mark 3 cm above the patella on the front and then transfer it as a lateral control mark. This makes it possible to check whether the user is standing low enough in the pressure tank before curing.

► Pull on the 642T6=350X500X0.25 film bag.

8.9.10 Curing the prosthetic socket with the user standing

INFORMATION

Fabricating a plaster cast

All of the information in this section applies when fabricating a plaster cast, except for the instructions regarding the use of UV protection and UV light. Instead, the user must put weight on the residual limb until the plaster cast has cured. After this section has been completed, the plaster cast is pulled off the residual limb and processed further as usual. This document does not contain any further information on this subject.

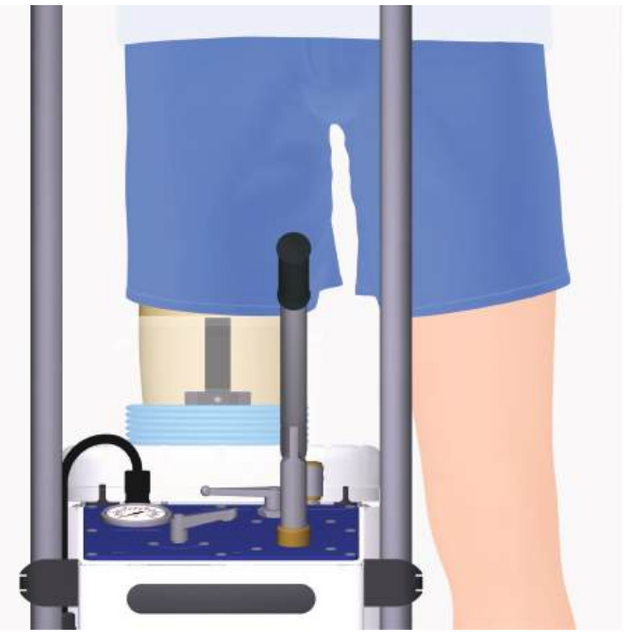
743G18=1-1

743G18=1-4

► Connect the plug to the wall socket.

INTERNAL CIRCUIT + **FILL**

► Set the control levers to the positions shown.



► Apply the UV protection to the clamping rings and secure it with the hook-and-loop strap.

The following illustrations show the base unit without UV protection. This is to make it easier to see the position of the user in the base unit. The UV protection should only be removed when UV light is no longer needed for the treatment of the user.

► Position the base unit close to the user while they are seated. If necessary, adjust the height of the handle for the user so they can hold on to it during the entire process.

► Help the user step into the pressure tank without bending the knee too much.

► Instruct the user to step in slowly until they touch the relief pad, without putting any weight on it.

► If the optional lateral control mark mentioned in the **Building up the layers of the prosthetic socket on the user's residual limb** section has been made, check whether it is visible above the upper clamping ring.

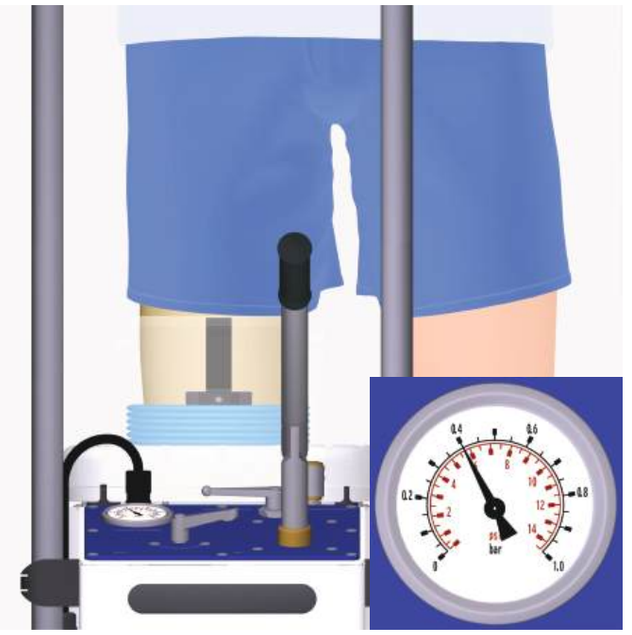
→ If this is the case, the user is standing too high in the pressure tank and the following measures should be taken:

→ Reduce the pressure slightly and check whether the user is now standing low enough in the pressure tank.

→ If this does not help, the user must step out of the pressure tank, the pressure tank must be emptied completely and the vector tower must be removed and reduced in size so that the control mark is no longer visible.

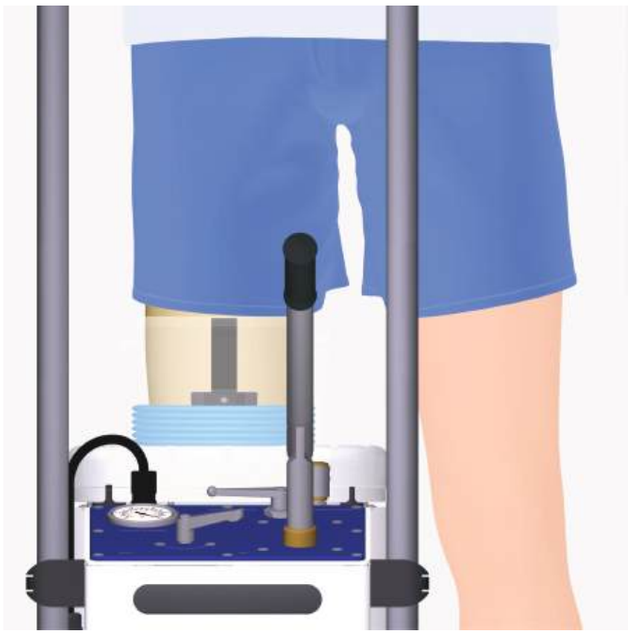
→ If the optional lateral control mark is not visible above the upper clamping ring, you can continue with the following instructions.

► Pump with the hand pump lever until the user feels slight pressure.



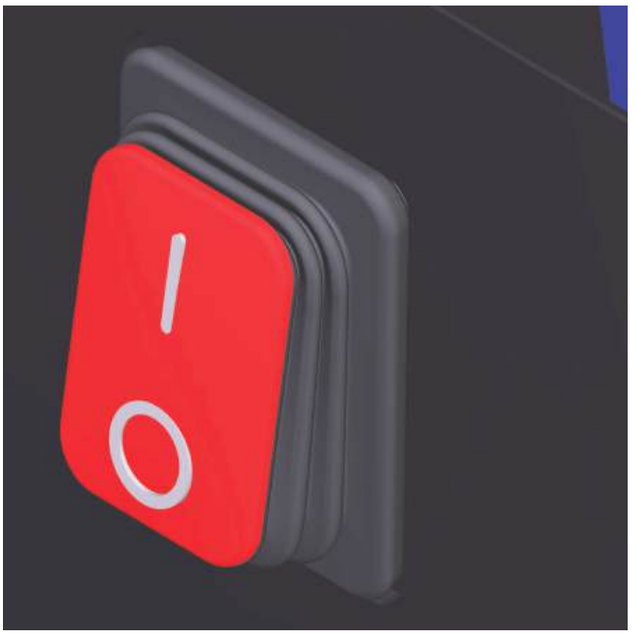
► Instruct the user to slowly transfer their full weight onto the residual limb so that it is not lifted by the water pressure.

The user should be standing fully on the residual limb from **0.4 bar** at the latest and should no longer be standing on the floor with the other leg.

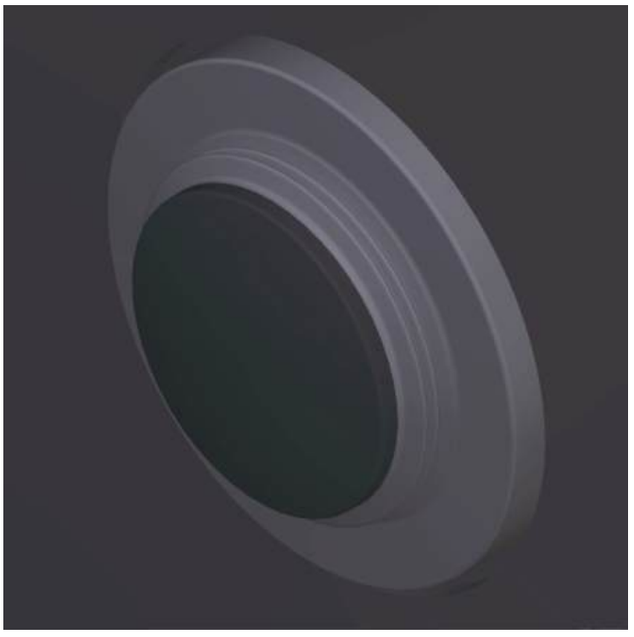


► Continue pumping with the hand pump lever until the pressure level determined for the user is reached.

► **WARNING!** Never leave the user alone while they are standing in the base unit.



► Turn the main switch on.



► **CAUTION!** If the temperature becomes uncomfortable for the user, turn off the UV lamp and, if necessary, let the user step out of the pressure tank and remove the prosthetic socket.

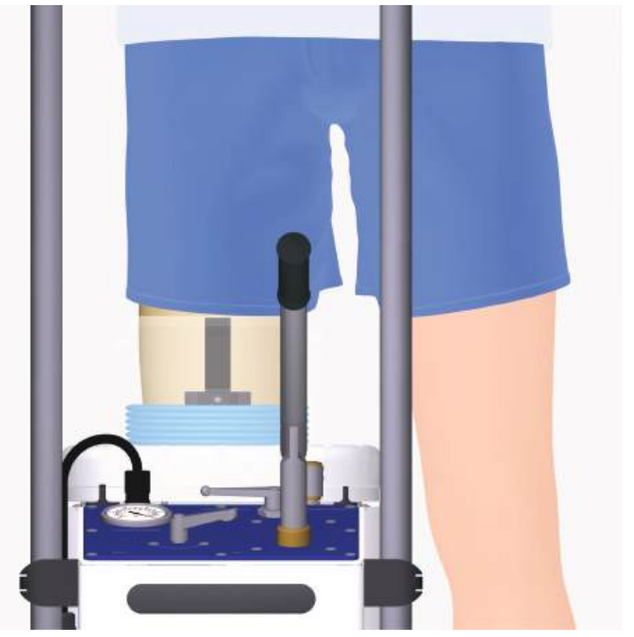
► While curing with UV light, keep the pressure at the set value using the hand pump at all times.

► Briefly press the start button to start the timer and turn the UV lamps on for 5 minutes.

► After the timer runs out, briefly press the start button again to start the timer for a second time.

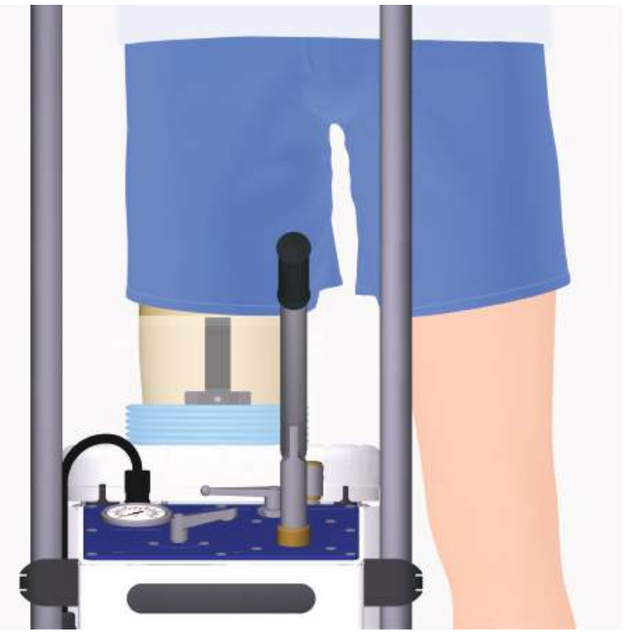
INTERNAL CIRCUIT + **EMPTY**

► Set the control levers to the positions shown.



If the user finds it too difficult to stand solely on their residual limb during the second 5 minutes, they may slowly shift their weight so it is evenly distributed between both legs. The residual limb should be moved as little as possible.

Normally, however, they should stand solely on the side being treated for 2× 5 minutes.



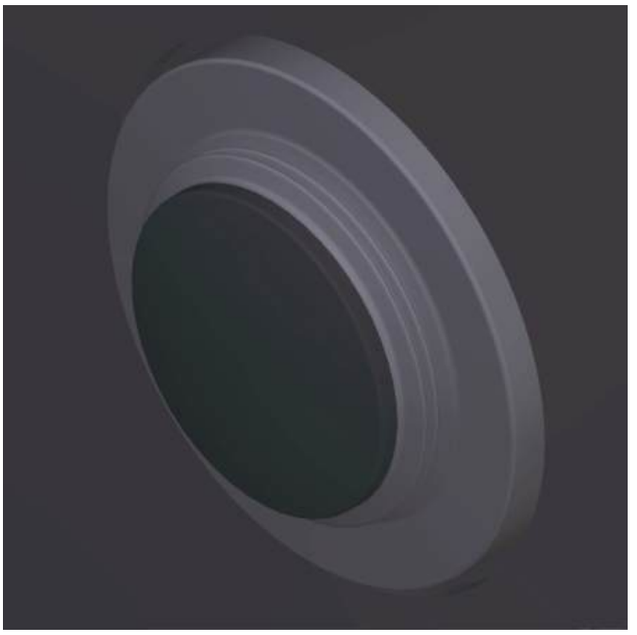
► Instruct the user, as the pressure decreases during pumping, to slowly take the weight off the residual limb and pull it out of the pressure tank.

► Use the hand pump lever to pump until the pressure tank is empty.

► **NOTICE!** To protect the membrane, remove the vector tower only after the pressure tank has been completely emptied, so that the distal end cap is no longer held in place by the membrane due to water pressure.

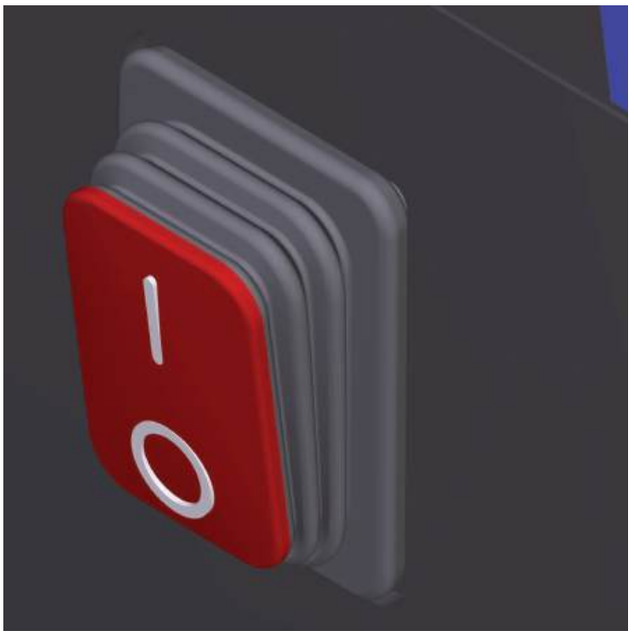
8.9.11 Fully curing the prosthetic socket without the user

- ▶ Pull off the film bag.
- ▶ Pull out the removal aid.
- ▶ Pull the prosthetic socket off the residual limb.
- ▶ Clean tools and surfaces that have come into contact with the resin using isopropyl alcohol and a soft cloth.
- ▶ **CAUTION!** Ensure adequate ventilation and respiratory protection when working on the fibreglass-reinforced prosthetic socket.
- ▶ Saw off the upper section of the prosthetic socket along the dashed line (e.g. with a jigsaw or oscillating saw) and remove the uncured areas of the resin casting socks. Wear disposable gloves while doing so.
- ▶ Grind the socket brim smooth with a milling machine to protect the base unit's membrane from burrs.



- ► Place the prosthetic socket ❷ in a 642T6=350X500X0.25 film bag with the socket brim facing down.
- ► Place the prosthetic socket in the film bag ❶ into the pressure tank with the distal end facing up.

- ► Briefly press the start button to start the timer and turn the UV lamps on for 5 minutes.
- ► At the end of the 5 minutes, remove the film bag containing the prosthetic socket from the pressure tank.
- → The prosthetic socket is fully cured.



- ► Turn the main switch off.

743G18=1-1

743G18=1-4

- ► Remove the plug from the wall socket.

8.9.12 Aligning the interim prosthesis

The illustration shows what an interim prosthesis might look like. This is a vacuum prosthesis. The following instructions provide an overview of the required steps.

► When fabricating the prosthesis, observe the instructions for use of the relevant prosthetic components, the processing instructions and occupational health and safety guidelines for the materials.

1) **CAUTION!** Observe the warning messages regarding acrylic monomer sensitisation or allergy at the start of the **Fabricating the prosthetic interim socket/Fabricating a plaster cast** section (see page 35).
2) Align the prosthetic foot and adapters in an alignment apparatus using the user data.
3) Mark the course of the socket brim on the prosthetic socket.
4) Saw along the marked socket brim (e.g. with a jigsaw or oscillating saw).
5) Remove all remnants of the stretch film.
6) Wash the prosthetic socket with hot water.
7) Grind the socket brim with a milling machine at low speed.
8) Smooth the socket brim using sandpaper under running water.
9) **CAUTION!** Thoroughly clean the inside and outside of the prosthetic socket with water and soap to remove acrylic monomer residues. Then rinse the prosthetic socket thoroughly with water, dry it with a soft cloth and allow it to air dry in order to remove residual moisture.
10) Shape the anchor arms of the lamination anchor evenly to the prosthetic socket.
11) Roughen the distal surface of the prosthetic socket to prepare for gluing.
12) Glue the prosthetic socket to the lamination anchor (e.g. with 636K49 SuperGlue or with 617H21=* Orthocryl sealing resin, 617P37=* hardening powder and 639A1=1 talcum powder).
13) Attach the valve to the prosthetic socket.
14) Secure the bonding of the prosthetic socket to the lamination anchor by wrapping it with 699G30=* Cellacast Xtra casting tapes.
15) Thermoform the socket brim according to the needs of the user.
    → Use a hot air gun with a moderate temperature and suitable protective gloves.
    → Hold the thermoformed elements in position until they have cooled.
16) Finish the prosthesis with the user.
    → Optimise the static alignment.
    → Optimise during dynamic fitting.
    → Secure all screw connections according to the information on Loctite and torque in the instructions for use of the prosthetic components.
17) **CAUTION!** Advise the user that the maximum permissible wearing period of 6 months for prosthetic interim sockets made using Lumeo resin casting socks must not be exceeded.

8.10 Emptying the water tank

Emptying the pressure tank

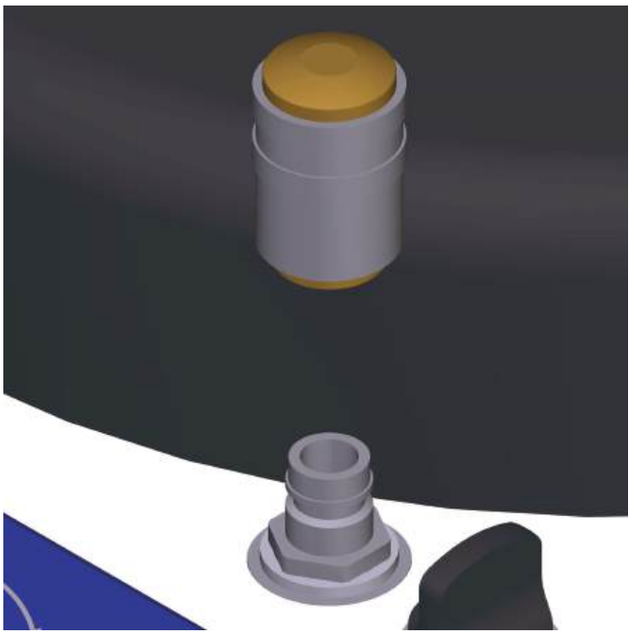
INTERNAL CIRCUIT + EMPTY

► Set the control levers to the positions shown.

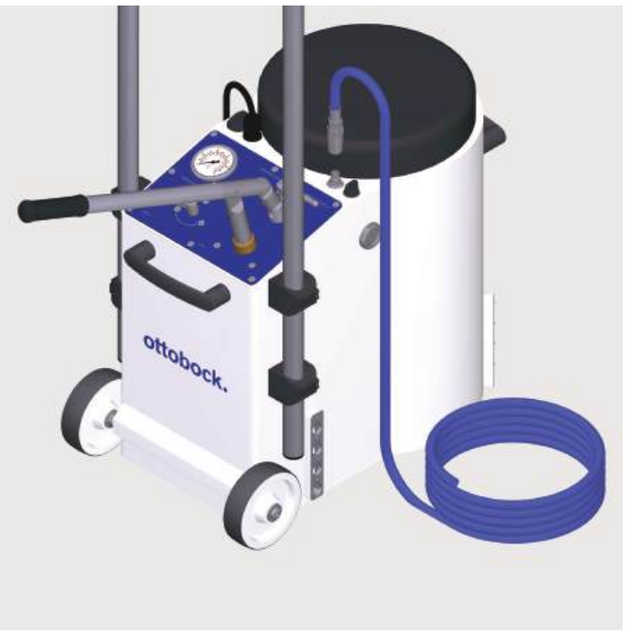
► Use the hand pump lever to pump until the pressure tank is empty.

One of the following methods can be used for emptying (**Emptying via hose**, **Emptying via drain screw and drain grate** or **Emptying via drain screw and collecting vessel**).

Emptying via hose



► Remove the blind cover from the hose coupling.



► Connect the hose to the hose coupling.

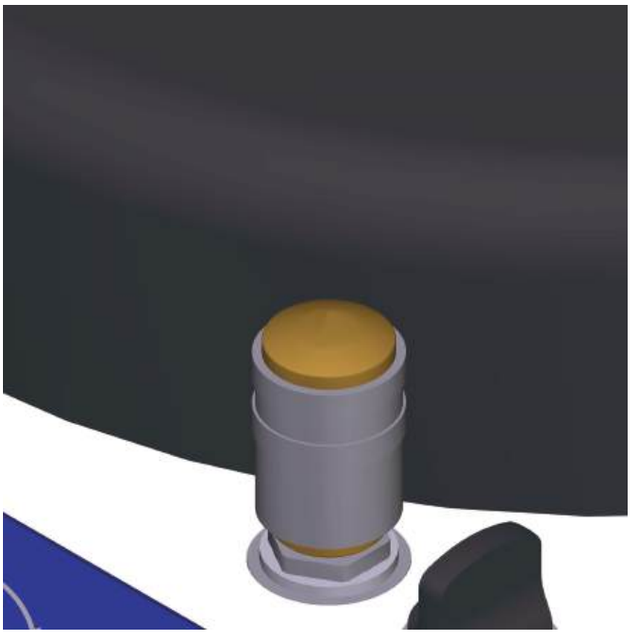
► Insert the hose into the bucket and secure it against slipping out.

EXTERNAL CIRCUIT + **FILL**

► Set the control levers to the positions shown.

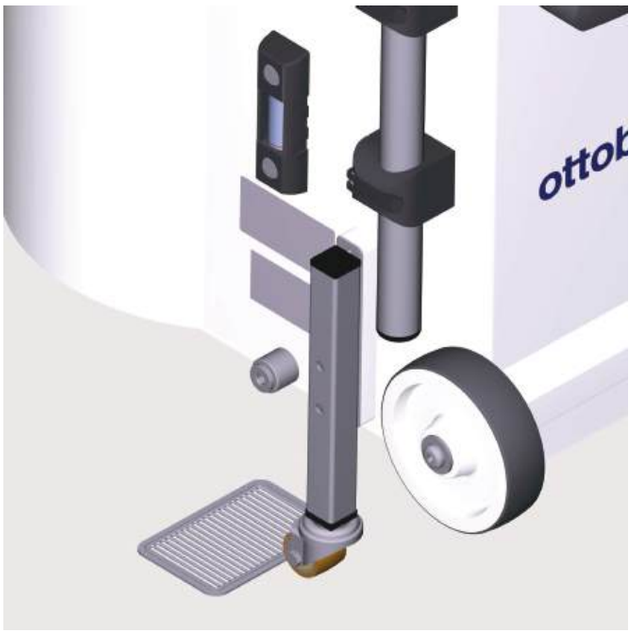
► Pump with the hand pump lever.
► Only stop pumping when no more water is being pumped out.

► After removing the bucket, disconnect the hose from the hose coupling.

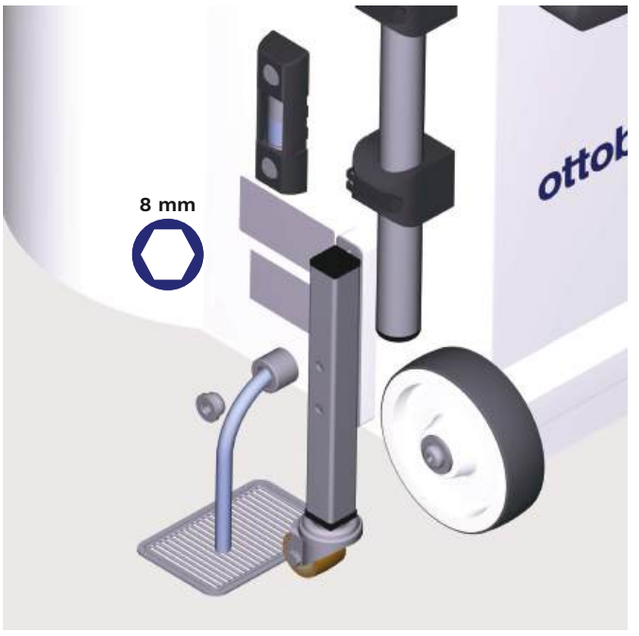


► Fit the blind cover on the hose coupling.

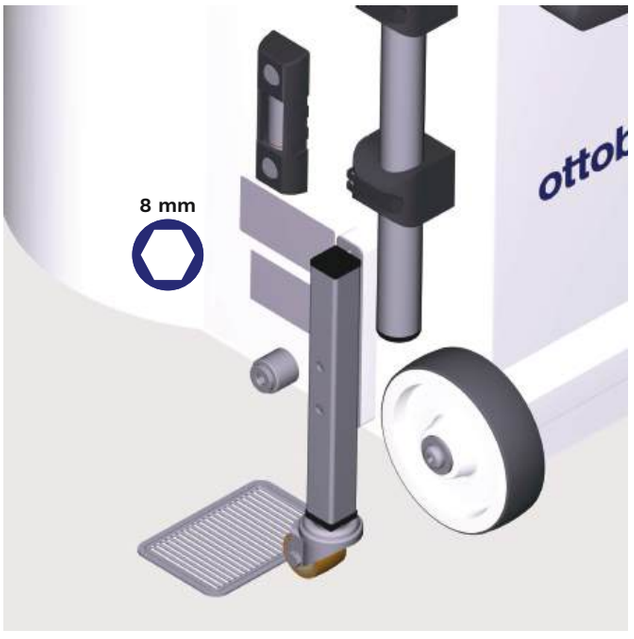
Emptying via drain screw and drain grate



► Position the drain screw of the base unit with feet over a drain grate.

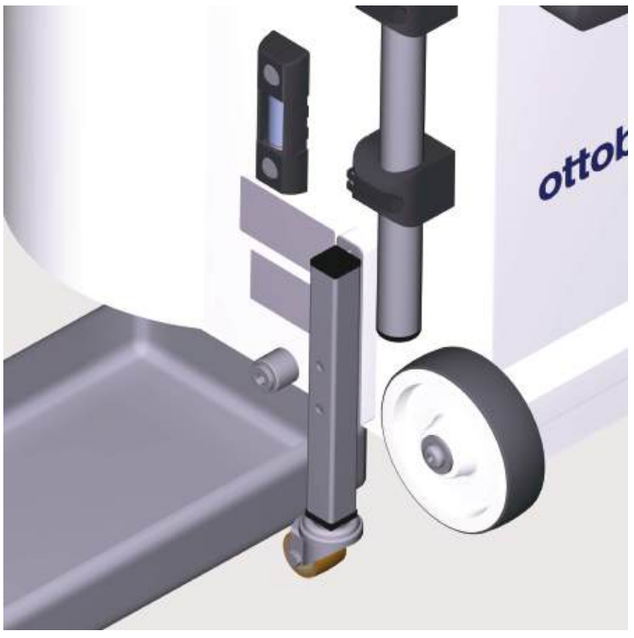


► Unscrew the drain screw.
► Allow the water to drain completely.
→ If necessary, tilt the base unit so that the water can drain more easily.

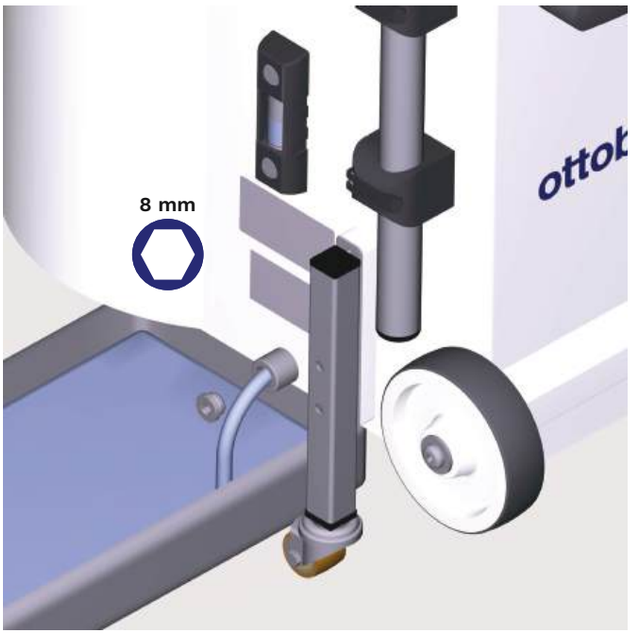


► Tighten the drain screw.

Emptying via drain screw and collecting vessel



► Position the drain screw of the base unit with feet over a collecting vessel.



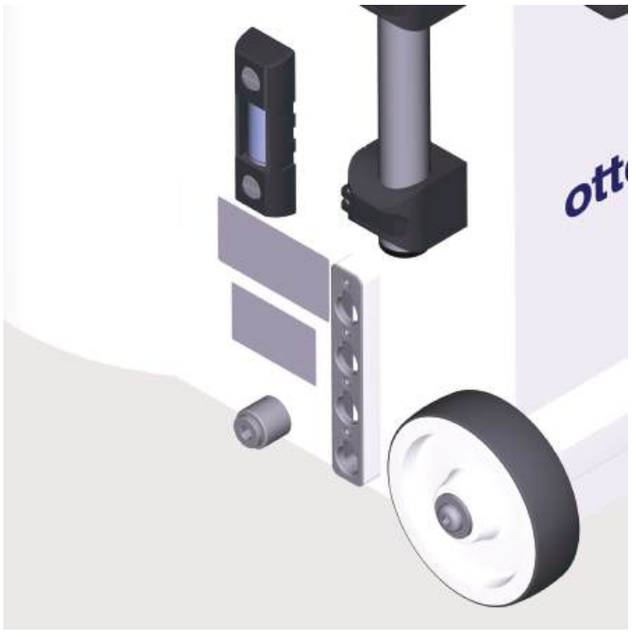
► Unscrew the drain screw.
► Allow the water to drain completely.
→ If necessary, tilt the base unit so that the water can drain more easily.

► Tighten the drain screw.

8.11 Replacing product components

Replacement measure and section	Interval	Required materials
Replacing the water Section: **Replacing the water** (see page 71)	1× monthly	Distilled water (20 litres)
Replace the membrane Section: **Replacing the membrane and pressure tank** (see page 72)	Every two years (Replace for the first time after one year of use.)	743Y958=1 membrane
Replace the pressure tank Section: **Replacing the membrane and pressure tank** (see page 72)	Every two years (Replace for the first time after two years of use. Then alternate between **replacing the membrane** and **replacing the pressure tank**.)	Pressure tank (membrane with inner tank and hose couplings) 743Y976=1
Replacing the fine fuse Section: **Replacing the fine fuse** (see page 80)	if defective	T 2A L 250 V fine fuse JAM-01.12.0004.0

Repairs



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► **WARNING!** If repairs are required, contact the manufacturer, specifying the fault and the following information on the nameplate directly below the fill level indicator: serial number (SN), article number (Art. no), year of manufacture (Year). Repair work may only be performed by service technicians authorised by the manufacturer.

8.11.1 Replacing the water

1) Follow the instructions in the **Emptying the water tank** section (see page 66).
2) Follow the instructions in the **Filling the water tank** section (see page 23).

8.11.2 Replacing the membrane and pressure tank

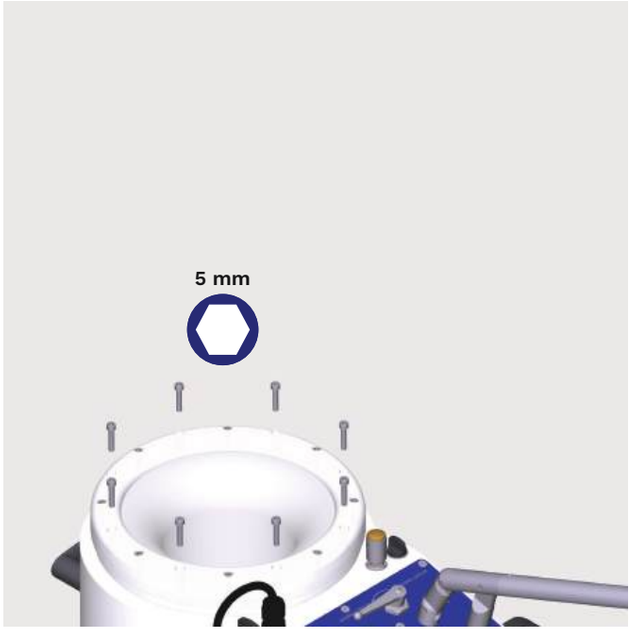
CAUTION!

Risk of burns on hot UV lamps

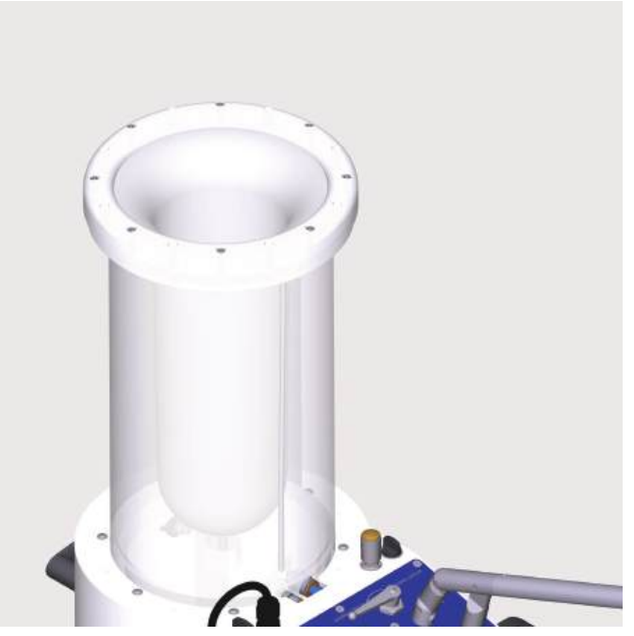
► Only carry out the following replacement tasks when the UV lamps have cooled.

► Start by following the instructions in the **Emptying the water tank** section (see page 66).

2 persons are required for the following tasks.



► Unscrew the screws that are seated deeper in the clamping rings.



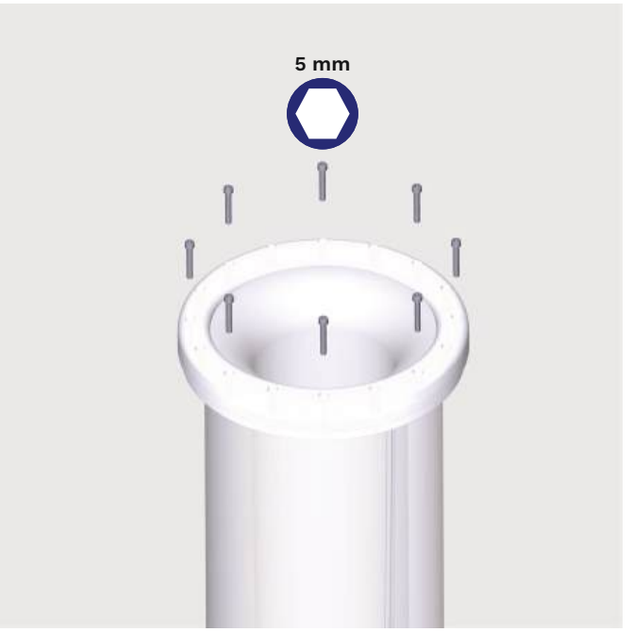
► Pull up the pressure tank (inner tank with membrane and clamping rings) until the hoses prevent it being pulled out any further.

► Tilt the pressure tank until it can be pulled out.

► Loosen the hose couplings and pull out the hoses.

► Note the plumb line of the screw running between the two hose couplings. The plumb line will be crucial later on when inserting the pressure tank into the base unit. The clamping rings must maintain this positioning.

► Drain any remaining water into the storage tank of the base unit.



► Unscrew the screws that are seated higher in the clamping rings.

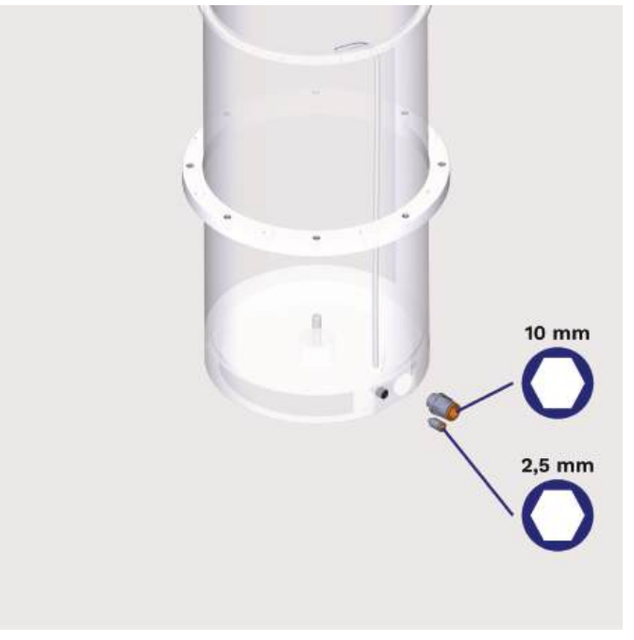
► Push the lower clamping ring down slightly along the plumb line.

► Carefully remove the upper clamping ring from the membrane. Some force is required as they are glued to each other with silicone.

► Remove the membrane from the top edge of the inner tank. Then slowly unscrew the membrane from the set screw located at the bottom of the inner tank in an anti-clockwise direction. Remove the membrane.

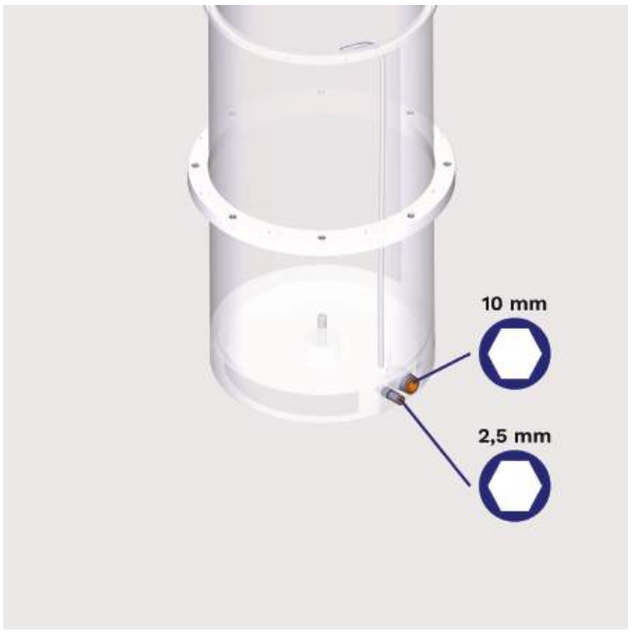
► If you only want to replace the 743Y958=1 membrane, continue with the instructions under the heading **Inserting the membrane** in this section.

► If the entire 743Y976=1 pressure tank is to be replaced, continue with the following instructions.



► Unscrew the hose couplings.

► Pull off the lower clamping ring.



► Screw in the new hose couplings.

► Slide the lower clamping ring onto the new inner tank.

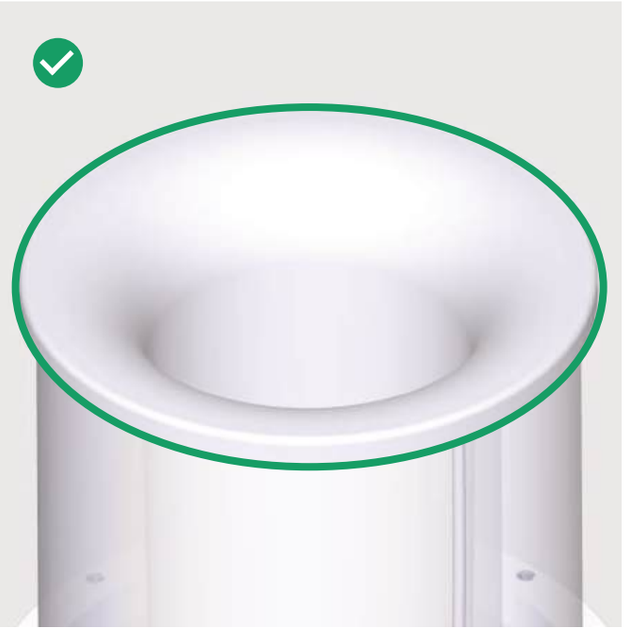
Inserting the membrane

► Before inserting the new membrane, remove any deposits from the inner tank with household detergent and a damp cloth without scratching the inner tank. Then rinse the tank and dry with a soft cloth.

► Slowly screw the new membrane onto the set screw located at the bottom of the inner tank in a clockwise direction until slight resistance is felt (approx. 5 turns).

► Evenly apply 1C silicone rubber (617H46) to the upper edge of the inner tank.

► For the subsequent fitting process, ensure that the edge of the membrane is not pulled unevenly over the outer edge.



► For the subsequent fitting process, ensure that the edge of the membrane is pulled evenly over the outer edge on all sides.

► Working as a pair, pull the membrane edge evenly over the outer edge on all sides.

► Carefully slide the lower clamping ring up along the plumb line without shifting or detaching the membrane.

► Fill the clamping grooves of the upper clamping ring with 1C silicone rubber (617H46) and spread evenly.

► Take the screw with the extended plumb line running between the two hose connections and insert it through the upper clamping ring into the lower clamping ring, screwing it in slightly.

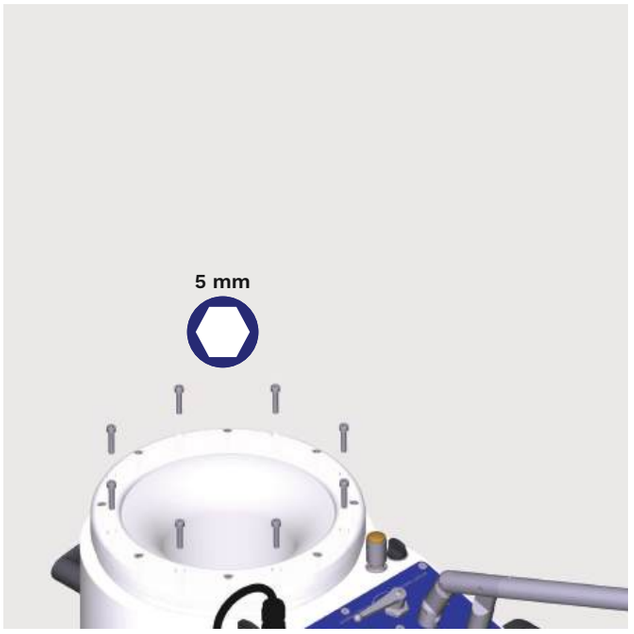
► Then screw in the remaining screws slightly.

► For optimum pressure distribution, use a torque wrench to tighten the screws in the staggered sequence shown (1. to 8.).

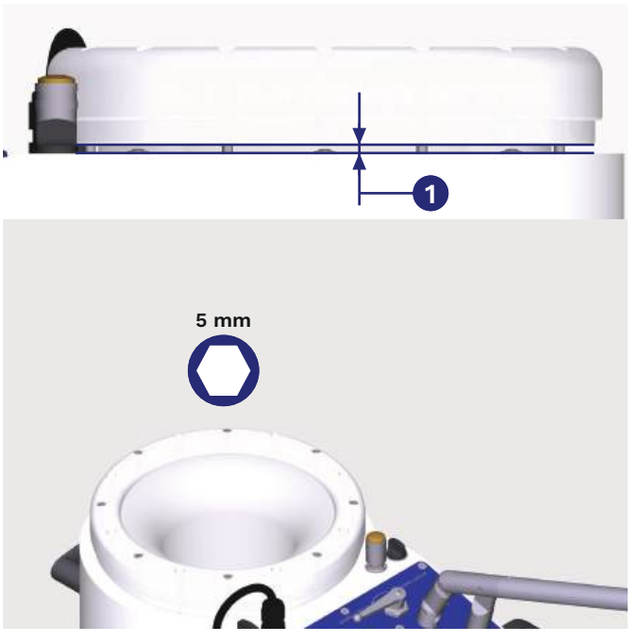
► Grease the contact surfaces of both hose ends where they meet the hose couplings with 84V1 Vaseline.

► Insert the hoses into the hose couplings.

► Tilt the pressure tank so that it can be fully inserted into the base unit.



► Insert the screws into the clamping rings.



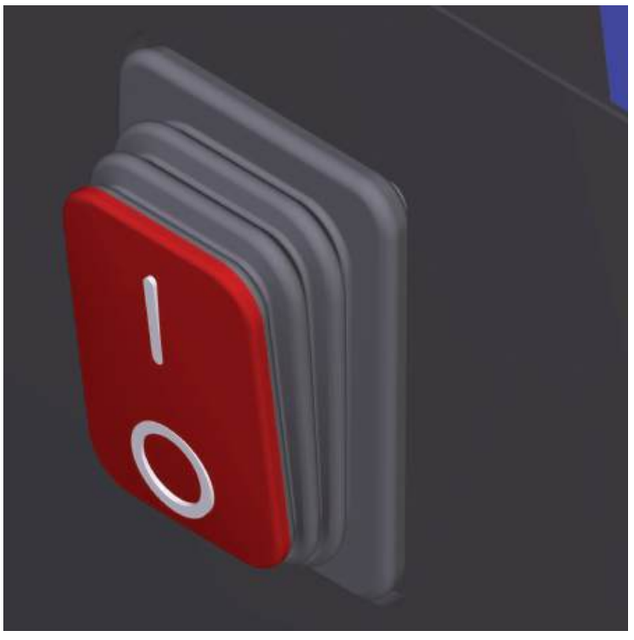
The gap ❶ between the lower clamping ring and the upper housing plate results from the fact that the pressure tank stands on the base plate of the base unit.

► Tighten the screws so they hold the pressure tank in its upright position without reducing the gap.

The assembly of the pressure tank is now complete.

► Finally, follow the instructions in the **Filling the water tank** section (see page 23).

8.11.3 Replacing the fine fuse



► Turn the main switch off.

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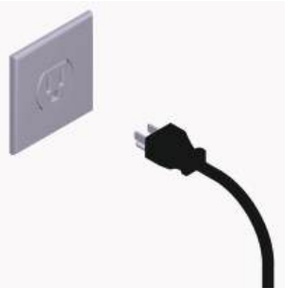
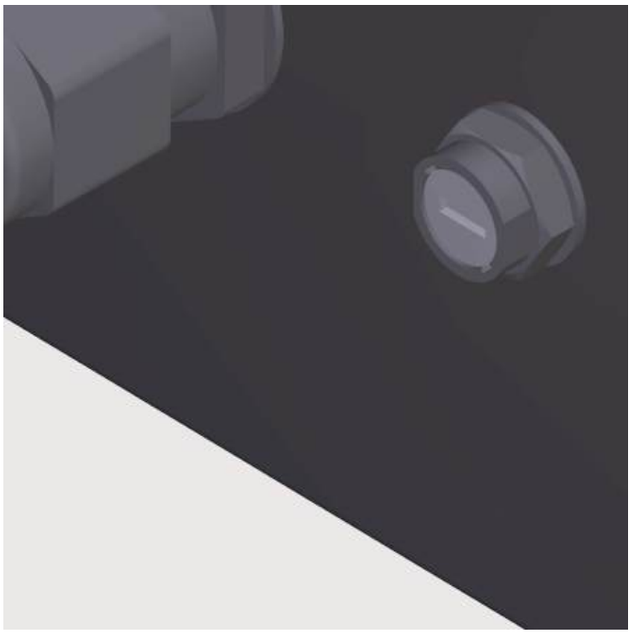
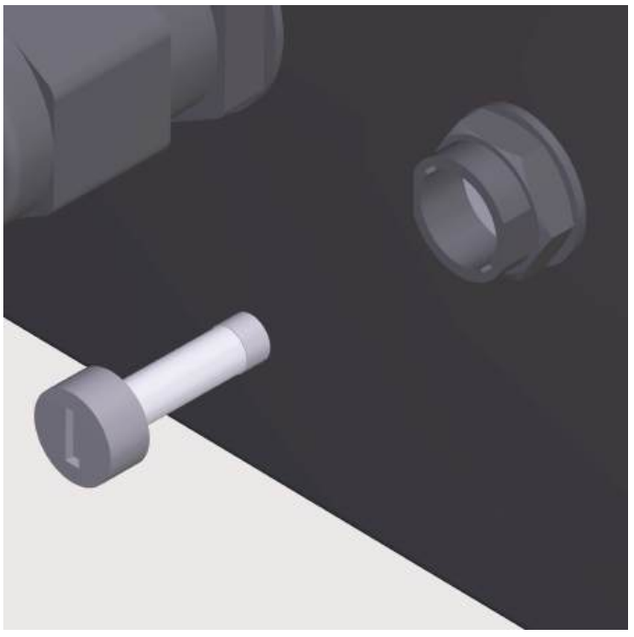


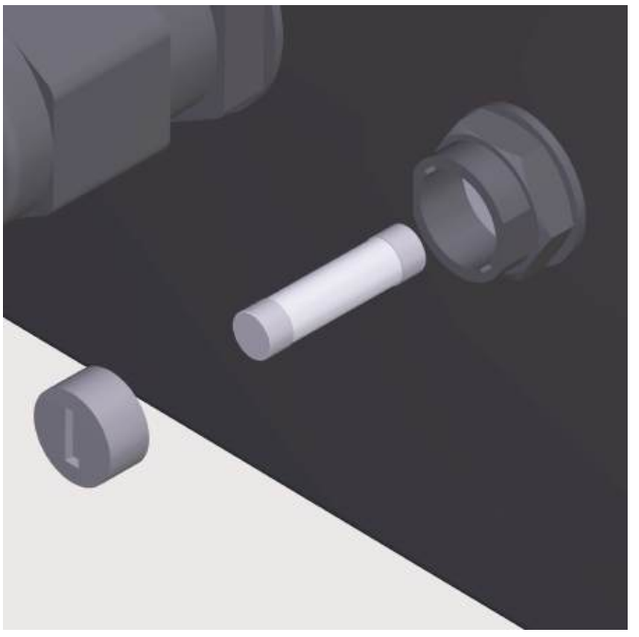
► Remove the plug from the wall socket.



► Turn the fuse cover anti-clockwise.



► Remove the fuse cover with the fine fuse.



► Remove the fine fuse from the fuse cover.

T 2A L 250 V fine fuse (article number: JAM-01.12.0004.0)

► Follow the instructions in reverse order to fit the new fine fuse.

9 Cleaning

NOTICE!

Product damage due to improper cleaning and unsuitable cleaning agents

► Clean the product according to the instructions given in this document.

► Contact the manufacturer in case of types of soiling not mentioned here.

Cleaning light soiling

1) Clean the product with a soft, damp cloth.
2) Dry the product with a soft cloth.
3) Allow to air dry in order to remove residual moisture.

Cleaning heavier soiling on metal product components

> **Required materials:** cleaning cloth, 634A58 isopropyl alcohol, soft cloth

1) **NOTICE! Verify material compatibility!**
   Clean the product with a cleaning cloth and isopropyl alcohol.
2) Dry the product with a cloth.

Cleaning test socks

1) Hand wash the test socks in warm water at **30 °C** with standard mild detergent.
2) Rinse the test socks thoroughly.
3) Allow to air dry. Do not expose to direct heat sources (e.g. sunlight, stove or radiator).

Cleaning the membrane

► To clean the membrane, refer to the **Protecting and caring for the membrane** section (see page 31).

10 Disposal

INFORMATION

This product may not be disposed of with regular domestic waste in all jurisdictions. Disposal that is not in accordance with the regulations of the country where the product is used may have a detrimental impact on health and the environment. Please observe the information provided by the responsible authorities in the country of use regarding return, collection and disposal procedures.

► **INFORMATION:** When disposing of consumables, also observe the information from the manufacturers (e.g. in the case of lumeo resin casting socks, the information on the packaging and the safety data sheet).

11 Legal Information

11.1 Liability

The manufacturer will only assume liability if the product is used in accordance with the descriptions and instructions provided in this document (Instructions for Use). The manufacturer will not assume liability for damage caused by disregard of this document.

11.2 Declaration of Conformity

EU declaration of conformity
in accordance with DIRECTIVE 2014/35/EU, Annex IV

ottobock.

Manufacturer

Ottobock Equipment B.V.

Mandenmaker 14
5253 RC Nieuwkuijk
The Netherlands

Person residing in the community who is authorised to compile the relevant technical documentation

Ottobock Equipment B.V.
R&D Manager
Mandenmaker 14
5253 RC Nieuwkuijk
The Netherlands

Description and identification of the product

Product	hydronetic lumeo
Type	743G18=1-1, 743G18=1-4
Trade name	hydronetic lumeo
Function	The product (743G18=1-1, 743G18=1-4 hydronetic lumeo) is intended for the fabrication of a TT prosthetic interim socket made of a fibreglass composite. (Intended installation location: orthopaedics workshop – user care area)

This is to declare in express terms that the product complies with all of the relevant provisions of the following EU directives.

2014/35/EU	DIRECTIVE 2014/35/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits
EU 2017/2102	DIRECTIVE (EU) 2017/2102 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 November 2017 amending Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment

Source of applied harmonised standards

NEN-EN-IEC 62471:2008	Photobiological safety of lamps and lamp systems

Nieuwkuijk	2025-09-24	A.H.M. Boom
Town/City	Date	MANAGING DIRECTOR

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