

nova **PRO**



feel your **PRO**

Instructions for Use

RUCK[®]

EN | English

5800001

8058902 | Instructions for Use for Podiatry Drill nova PRO
REV04 | Revision status: 2025-01-10

Thank you for your trust

Dear Customer,

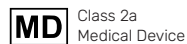
With the nova PRO, you have acquired a podiatry drill that sets standards in terms of functionality and performance. It was resolutely developed "based on best practice for use in the best practices". You will notice the many details that are taken into consideration in this new development, details that reflect over 90 years of experience and expertise.

These instructions for use provide a basic introduction to the functions and use of the device. It is also an integral part of the medical device and helps to optimise the safe use of the device and avoid operating errors. Please read the instructions for use carefully before using the device for the first time and keep them close to the device.

Backed by our name and a two-year warranty, you can be assured that you will enjoy your device for a long time.

We sincerely thank you for the trust you have placed in our company and hope you enjoy your daily work.

Kind regards, HELLMUT RUCK GmbH



HELLMUT RUCK GmbH | Daimlerstr. 23 | DE - 75305 Neuenbürg, Germany
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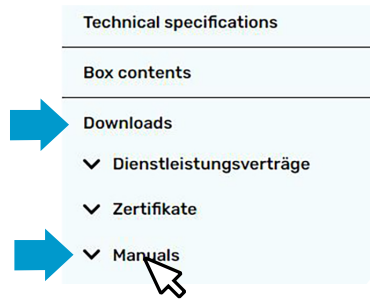
Instructions for use in other languages

These instructions for use are also available in other languages. You can find the language variants on our websites:



Search term: **5800001**

Open **Gebrauchsanweisungen** | **Manuals** in the **Downloads** area.



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Information relevant to these instructions for use

1 Information relevant to these instructions for use

1.1 Symbols used

These symbols are used in the instructions for use, on the packaging of the product or on the product itself:



Danger to persons. Observe the note marked with this symbol to avoid personal injury.



Endangering the condition or functionality of the product or endangering the environment.



Medical device



CE conformity marking with indication of the notified body.



UKCA conformity marking



Application part, Type BF



Device with protection class II (protective insulation).
Does not require earthing, as protection is provided by the double insulation.

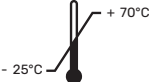
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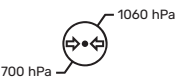
Protection against contact with fingers and against foreign bodies with a diameter of more than 12.5 mm.
Protection against water: Protection against vertically dripping water.



Protect from moisture and humidity.

Information relevant to these instructions for use

 Lower and upper temperature limit for storage and transport

 Lower and upper air pressure limit for storage and transport

 Lower and upper humidity limits for storage and transport



Follow the instructions for use.



Observe the disposal notice.



Manufacturer



Manufacturing date



Item number



Serial number of the device



Product identification number (Unique Device Identification)

Information relevant to these instructions for use

1.2 Meaning of signal words

The following signal words are used in these instructions:



DANGER

Notice indicating a very probable or imminent hazard. If this hazard is not avoided, it can result in death or serious injury.



WARNING

Notice indicating a probable hazard. If this hazard is not avoided, it can result in death or serious injury.



CAUTION

Notice indicating a possible hazard. If this hazard is not avoided, it could result in injury.

1.3 Declaration relating to these instructions for use

Hellmut Ruck GmbH reserves all rights to modify and supplement these instructions for use. Hellmut Ruck GmbH has taken great care to keep these instructions free of inaccuracies and omissions. Please contact us if you find any errors or inaccuracies. However, Hellmut Ruck GmbH assumes no liability for mistakes in these instructions for use or consequential damage resulting from the provision of these instructions for use or their application when using the product.

These instructions for use must not be disseminated or supplemented without the express approval of Hellmut Ruck GmbH.

1.4 Target group of the instructions for use

These instructions for use are intended for purchasers, operating companies and operators of the podiatry drill. The instructions for use are not intended for the persons to be treated (patients).

A specification of the intended operators can be found in the section "2.4 Prerequisites and qualifications of the operating personnel" on page 16.

According to the Medical Device Operator Ordinance (MPBetrV) applicable in Germany, the person operating the device must instruct the operators, make the instructions for use accessible and demonstrate that they have been read and understood.

Please make sure to observe the applicable national regulations and laws in the country or region of use.

1.5 Reporting obligations of the person operating the device

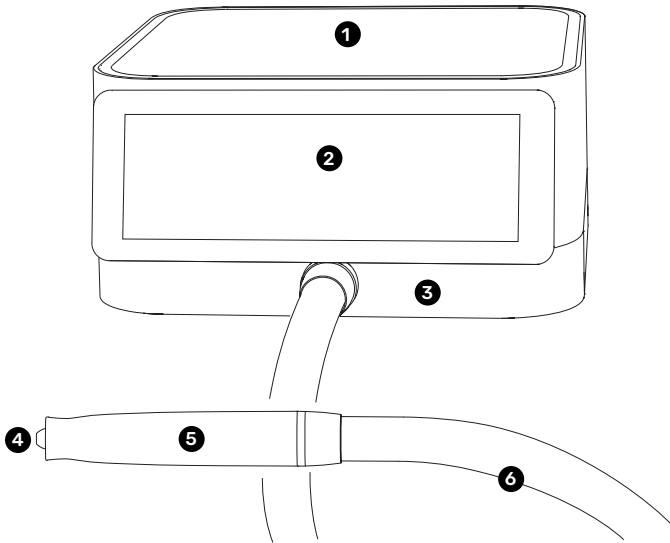
We would like to point out that the person operating the device is obliged to report all serious incidents that have occurred in connection with the product in accordance with Regulation 2017/745 EU. A serious incident is defined as a temporary or permanent serious deterioration in the state of health of a patient, user or other person or their death.

The responsible person must inform both RUCK as the manufacturer and the competent authority of the Member State in which the operator and/or the treated person is established.

Product description

2 Product description

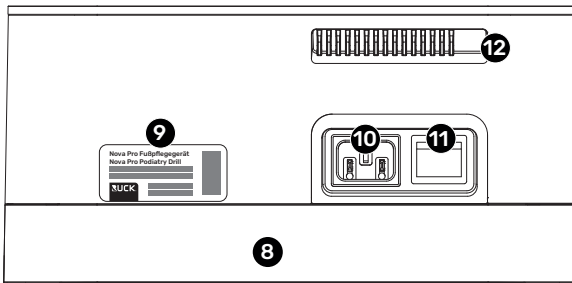
2.1 Main components



Front view of the device

- 1 Main unit with control system and suction turbine
- 2 Removable display unit
- 3 Cover of the dust filter bag
- 4 Chuck (interchangeable clamping head + coupling)
- 5 Handpiece
- 6 Flexible suction hose

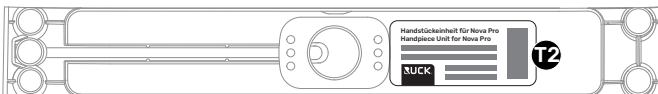
Positions **3** to **6** form the "handpiece unit" assembly.



Rear view of the device

- 8** Cover of the HEPA filter
- 9** Main type plate
- 10** Mains cable socket
- 11** Mains switch
- 12** Air outlet

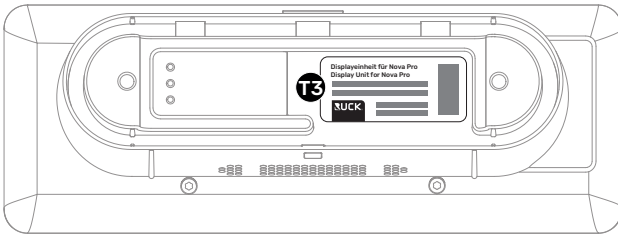
2.1.1 Type plates in the cover of the dust filter bag and on the display unit



Inside of the cover of the dust filter bag

- T2** Type plate of the handpiece unit (handpiece, flexible suction hose and cover of the dust filter bag)

Product description



T3 Type plate of the display unit

Rear of the display unit

2.2 Functional description

Suction turbine and handpiece

The suction turbine in the main unit is connected to the handpiece via a flexible suction hose. The motor in the handpiece rotates an instrument (not included in the scope of delivery), which the operator places in the interchangeable chuck of the handpiece. Instruments with different shapes, sizes and properties (burs, grinders, polishers) can be used.

Details of suitable instruments: See section "5.16 Instruments", page 58.

Dust filter bag and HEPA filter

The dust produced when removing skin and nails is sucked into the device and collected in 2 filters :

The dust filter bag in the front filter slot is the main filter. It contains activated carbon and collects almost all of the dust produced. The capacity is sufficient for up to 150 treatments.

The additional HEPA filter in the rear filter slot collects the smallest dust particles and thus ensures maximum air purity.

Dry technology

The podiatry drill works with dry technology and is suitable for continuous operation.

2.3 Intended usage

The podiatry drill is designed to remove superficially pathologically altered areas of skin and nails on the feet and collect them with built-in filters. The skin and nail areas must be sufficiently dry.

The device is intended for use in the following environments:

- › Hospitals
- › Clinics
- › Podiatry practices
- › Medical foot care facilities
- › Home environment (outpatient)

Any other use is non-intended use.

Intended use also includes compliance with all instructions, safety instructions and regulations specified in these instructions for use.

If the device is not used as intended, all liability is excluded and the warranty is rendered null and void.

2.3.1 Indications

The device is intended for the treatment of the following findings and symptoms:

- › Excessive cornification (hyperkeratoses) and pressure sores
- › corns (clavi)
- › fungal infection (mycoses)
- › hardened skin and calluses (callositas)
- › blisters
- › ingrown, thickened or unsightly nails

2.3.2 Contraindications

The device must not be used for these indications:

- › for injured skin
- › for hypersensitivity of the skin
- › in case of incompatibility with the used rotary instruments (instruments may contain allergenic materials such as nickel)

Product description

2.4 Prerequisites and qualifications of the operating personnel

Necessary qualifications of operators:

The person must have appropriate expertise and be authorised to treat patients.

Intended users:

- › Medical practitioners
- › Podiatrists
- › Medical chiroprodists

The device is not intended to be used by non-professionals.

Age range of operators:

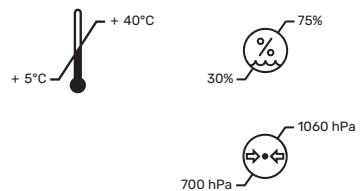
- › Minimum age: 18-years
- › Maximum age: Time of retirement from professional life

2.5 Suitable operating conditions

Operating temperature: +5°C to +40°C

Air humidity: 30 to 75 %, without condensation

Air pressure: 700 to 1060 hPa,
maximum 3000 metres above sea level



IMPORTANT

Make sure that the relative humidity does not fall below 30%. If the floor is made of synthetic material and the humidity is too low, electrostatic discharges could affect the functioning of the unit.



IMPORTANT

Make sure that no part of the device is in direct sunlight. Exposure to direct sunlight can impair the legibility of the display and hinder the suction function and cooling of the device.

3 Basic safety instructions

The following instructions are intended to ensure the safety of all persons who operate, use or are treated with the podiatry drill.

Observe and follow the instructions to avoid personal injury. If you ignore the safety instructions and warning notices, you bear the responsibility.

Liability of the manufacturer is excluded.

3.1 Hazards due to electricity



WARNING

Only connect the device to a suitable mains supply. Observe the information on the type plate. Incorrect operating voltage can lead to hazards due to electrically overloaded components.

Disconnect the mains plug before cleaning or disinfecting the device.

3.2 Hazards due to a damaged device



WARNING

Only use the device if it is undamaged. Unplug the mains plug if you notice any unusual heat development, smell or smoke.

Ensure that the mains cable is not crushed, kinked or rubbed against other objects.

Check the mains cable daily for damage. In a domestic environment, animals may have damaged the mains cable.

Do not place any parts on the device that are heavier than 2 kg.

Do not use the device if it has been subjected to a strong impact, for example if the device has fallen on the floor. Even if no external damage is visible, electrical components may be damaged. There is then a risk of electric shock when touching.

In this case, have the device checked by the manufacturer or an authorised service centre before using it again.

Basic safety instructions

3.3 Hazards due to unauthorised maintenance or unauthorised conversions



WARNING

Do not carry out any conversions, modifications, repairs or maintenance that are not described in these instructions for use and have not been authorised by the manufacturer.

There are no components inside the main unit that can be cleaned or maintained by the operating personnel. Do not attempt to open the main unit. Only the slots for the filters may be opened. Internal components may only be serviced by the manufacturer or an authorised customer service centre.

Do not use any attachments or cables that have not been approved or provided by the manufacturer.

Unauthorised modifications or unsuitable accessories can lead to the following hazards:

- › Danger of electric shock.
- › Risk of injury due to sharp-edged, breakable or overloaded components.
- › Risk of injury due to malfunctions.
- › Increased electromagnetic interference emission.
- › Reduced interference immunity.

3.4 Hazards due to unauthorised operation



WARNING

Do not leave the device unattended when it is switched on.

Ensure that only authorised persons work with the device.

Ensure that the device is not accessible to children and cannot be used by children:

- › Small parts, such as instruments, can be swallowed.
- › Risk of strangulation due to suction hose and mains cable.
- › Also keep the packaging material away from children. Choking hazard due to parts of the packaging.

3.5 Hazards due to an unsuitable installation site



WARNING

Make sure that the air outlet on the back of the device is not covered.

Make sure that the mains switch and the mains plug are easily accessible, to quickly disconnect the device from the mains in case of danger.

Do not operate the device in rooms containing flammable or explosive substances. Danger of fire or explosion!

3.6 Hazards from potentially pathogenic particles



WARNING

The device extracts the majority of potentially pathogenic particles and sanding dust. It is nevertheless possible that small quantities are inhaled. Particle splinters (nail splinters, parts of the treated surface) present a hazard due to their proximity to the treatment area. Take the following precautions to minimise the hazards:

- › Carry out a thorough skin disinfection before treatment.
- › Wear a breathing mask, protective goggles and disposable gloves during treatment.
- › Check the suction hose daily for visible damage. If the suction system is leaking, the suction power at the handpiece will be reduced.
- › Work at high suction power for as long as possible and only switch off the suction function completely for as long as necessary.
- › If possible, change the filters before they are completely full. A high filling level reduces the suction power.

Basic safety instructions

3.7 Hazards due to unsuitable or faulty instruments

Only use instruments that meet the specifications on page 58.



WARNING

Only use instruments that are labelled as medical devices.

Only use undamaged, undistorted and disinfected instruments.

Unsuitable instruments endanger the person being treated and yourself.

A deformed or damaged instrument can also lead to unpleasant vibrations of the handpiece.

If germ-intensive work has been carried out, uncontaminated skin and nail areas must be treated with instruments that have been specially treated (sterilized) for this purpose during the next work process.

The cleaning, disinfection or reprocessing of the instruments used must be carried out in accordance with the manufacturer's instructions.

3.8 Hazards due to incorrect settings or incorrect use



WARNING

Always work at the speeds specified by the instrument manufacturer and minimise the pressure and treatment time.

Incorrect speed, too much pressure or working on an area for too long can lead to undesirable localised heat development, burning or penetration of the skin.

Excessive speed can lead to deformation or breakage of the instrument. This endangers the person being treated and yourself.

3.9 Hazards due to moving parts



WARNING

Hair, jewellery and clothing may get caught in rotating parts.

- › Wear long hair up or use hair protection.
- › Do not wear jewellery.
- › Wear close-fitting work clothing.

Only switch on the handpiece motor when you are holding the handpiece securely in your hand. The handpiece could otherwise make uncontrolled movements.

Only touch an instrument that is clamped in the handpiece when the instrument is no longer rotating. Risk of injury. The instrument continues to run briefly after the handpiece motor is switched off.

3.10 Hazards due to wetness and humidity



WARNING

Always keep the device dry. Do not expose the device to the elements.

Do not operate the device near bathtubs, sinks or other containers with water.

Do not hold the device under running water or immerse it in water or any other liquid.

Don't introduce any fluids into the unit.

Do not touch the device with damp or wet hands.

Do not touch the device if it has fallen into a liquid.

Danger of electric shock.

Always disconnect the device from the mains after use, as proximity to water can be dangerous even when the device is switched off.

Use packaging or a transport box designed for the device for transport in order to protect the device against moisture and mechanical damage.

Basic safety instructions

3.11 Electromagnetic disturbances – Requirements and tests

The interference emission and interference immunity ratings of the device meet the requirements imposed on devices that are not intended for life-support in the typical clinical environment. Medical electrical equipment is subject to particular precautionary measures relative to electromagnetic compatibility (EMC). Detailed information on interference emission and interference immunity can be found starting from page 96.

In particular, observe the following notices in order to avoid unwanted and potentially dangerous effects.



WARNING

Avoid operating the podiatry drill directly next to or stacked with other devices, as this could result in incorrect operation. If use in the manner described is still necessary, you should observe the podiatry drill and the other device to ensure that both are functioning normally.

Ensure a minimum distance of 30 cm / 12 in between the device and mobile, high-frequency communication equipment. Such devices include cordless telephones, mobile phones, laptops with WLAN or Bluetooth capability and accessories such as antenna cables and external antennas. These devices can affect medical electrical equipment.

Do not use any attachments or cables that have not been approved or provided by the manufacturer. The use of non-approved attachments or cables may lead to increased electromagnetic emissions or reduced electromagnetic interference immunity of this device and thus impair the function of the device.

3.12 Hazards due to inadequate disinfection



WARNING

Clean and disinfect the outer surfaces of the main unit, the display unit and the handpiece after each treatment.

At the end of the working day, clean and disinfect the chuck, the handpiece motor, the inside of the handpiece sleeve and the suction hose.

Insufficient disinfection can lead to transmission of disease. Please also observe the guidelines and recommendations of the national competent body for hygiene and disinfection.

Scope of delivery and assembly

4 Scope of delivery and assembly

4.1 Scope of delivery

Verify that the delivery is complete.

The following items make up the scope of the delivery:

- 1 x main unit with display unit
- 1 x handpiece with flexible suction hose
- 1 x mains cable with type C plug (Euro plug)
- 1 x mains cable with type G plug (for UK)
- 1 x dust filter bag
- 1 x HEPA filter
- 1 x set of instructions for use
- 1 x device logbook
- 1 x pull-off aid incl. bur fit gauge
- 1 x cleaning swab
- 1 x cleaning liquid
- 1 x additional interchangeable clamping head

4.2 Delivery

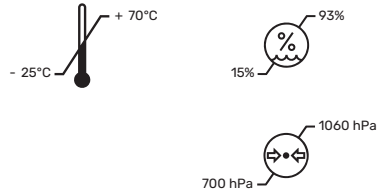
The device is delivered in a transport box. The transport box protects the device from damage during transport. The packaging materials used have been selected with due regard for environmental issues and can be recycled.

Please retain the packaging (cardboard box, polybag, PU foam parts) and use the transport box to return the device for maintenance work.

4.3 Storage conditions

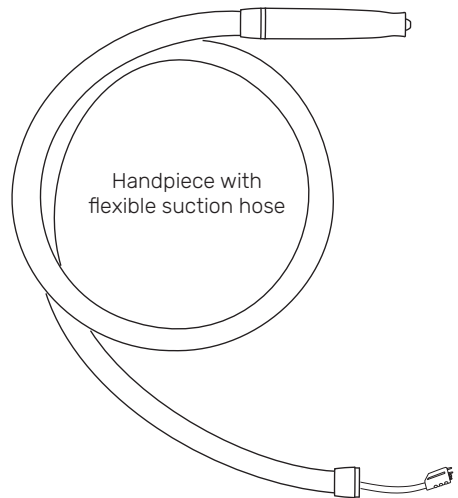
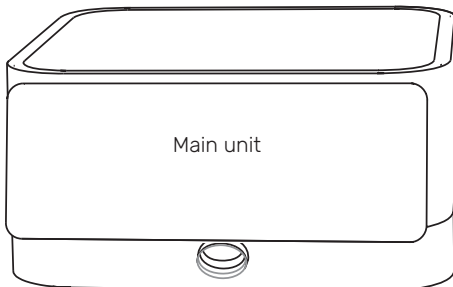
Ambient temperature and humidity during transport and storage: $-25\text{ }^{\circ}\text{C}$ (without relative humidity control) to $+70\text{ }^{\circ}\text{C}$ (at a relative humidity of 15 % up to 93 %, non-condensing).

Permissible air pressure: 700 to 1060 hPa



4.4 Assembling the device

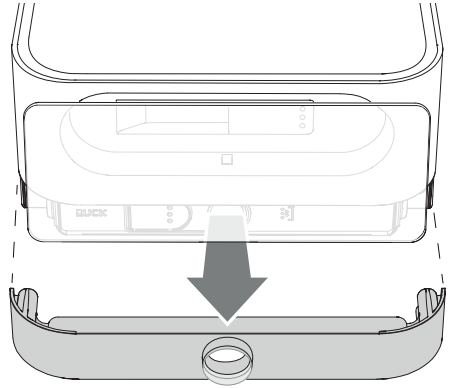
The main unit and the handpiece with the flexible suction hose are delivered separately.



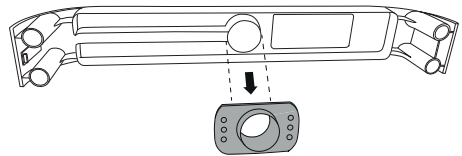
Assemble the components as described on the next two pages.

Scope of delivery and assembly

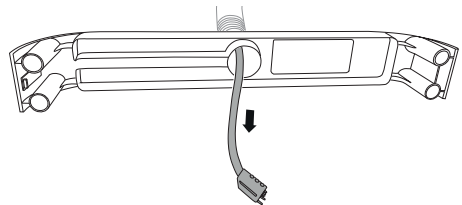
1. Pull the cover off the main unit.



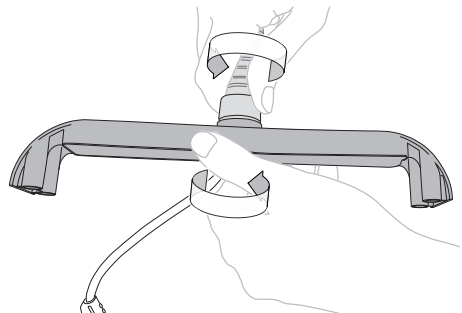
2. Pull the plug-in tube off the cover.



3. Guide the motor cable plug through the opening in the cover.



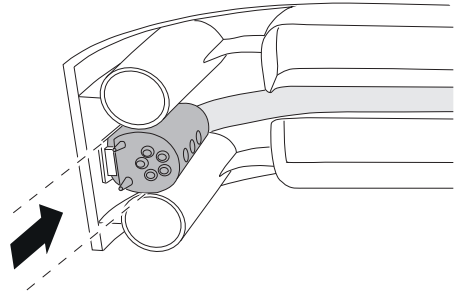
4. Screw the flexible suction hose to the cover.



Scope of delivery and assembly

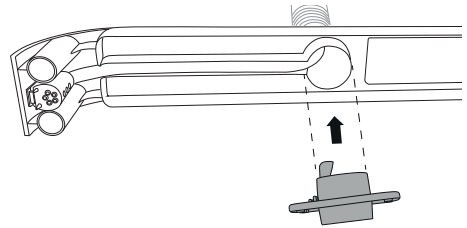
5. **Push** the motor cable plug into the guide of the cover **from above**. Do not push the plug in from the side.

The plug is seated correctly when the locking pin engages.

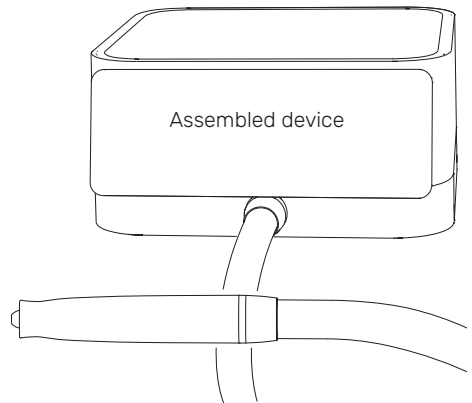
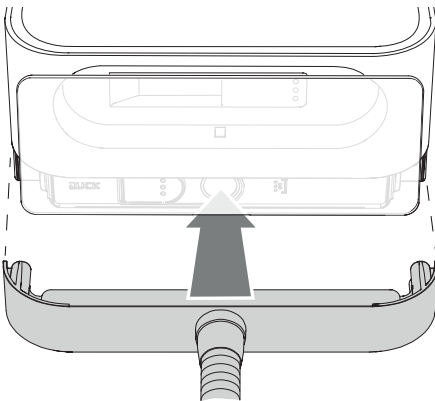


6. Place the plug-in tube on the opening in the cover.

Pay attention to the orientation of the plug-in tube: The plug-in tube has a cut-out for the motor cable.



7. Slide the cover (together with the hose hanging from it) into the main unit.



Operation and use

5 Operation and use

5.1 Preparations for operation

You can operate the device with the display unit attached or set up the display unit separately. To set up the display unit separately, you must first mechanically disconnect the display unit from the main unit. The display unit remains electrically connected to the main unit via the USB cable (USB-C).



IMPORTANT

The USB cable is used exclusively to supply power to the display unit. Do not connect any other device to this cable or to the USB socket.

5.1.1 Disconnecting the display unit from the main unit

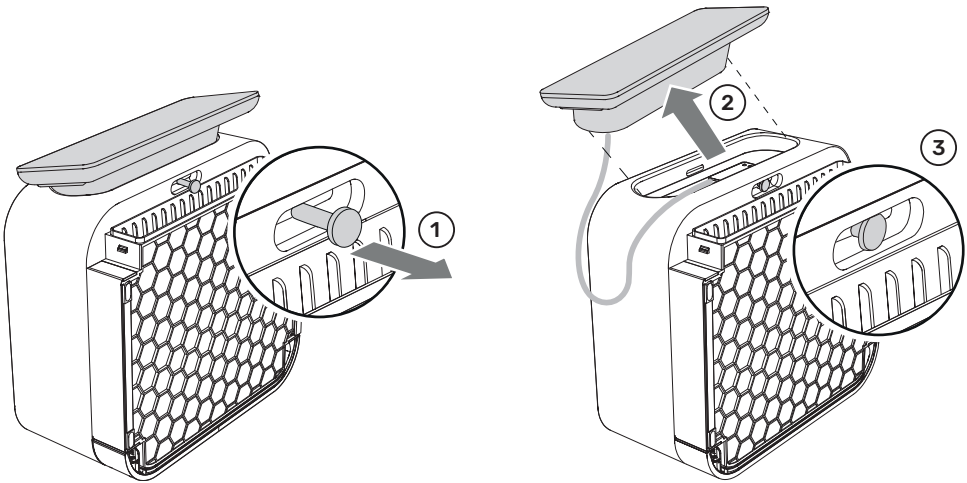
The display unit can be unlocked if there is no dust filter bag in the device. The easiest way to unlock the main unit is to place it on its back.

Preparations for disconnecting

1. If there is a dust filter bag in the device:
Remove the dust filter bag, see page 63.
2. Make sure that the mains switch is switched off.
3. Make sure that the mains cable is disconnected.
4. Place the main unit on its back.

Disconnecting

1. Hold the display unit and main unit with one hand and pull the release pin with the other hand.
2. Remove the display unit and place it in a suitable location.
3. Release the release pin.



Inserting the dust filter bag

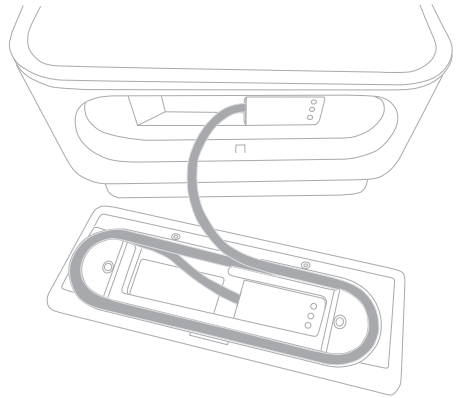
Insert a dust filter bag into the main unit as described on page 64.

Operation and use

5.1.2 Connecting the display unit with the main unit

It is not necessary to pull the release pin to mechanically connect the display unit to the main unit. The display unit engages automatically when you place the display unit in the recess provided.

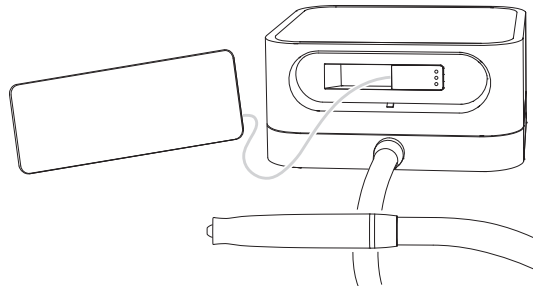
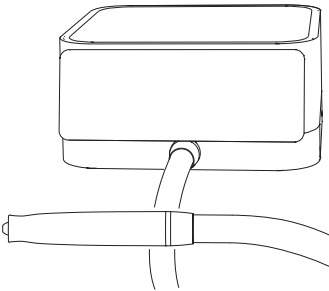
Ensure that the USB cable is correctly guided into the back of the display unit and that the cable is not crushed when inserted.



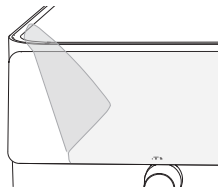
5.1.3 Setting upright

Place the main unit (with or without display unit) on a stable, level surface.

Make sure that no part of the device is in direct sunlight. Exposure to direct sunlight can impair the legibility of the display and hinder the suction function and cooling of the device.

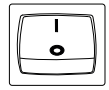
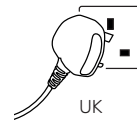
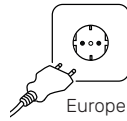


Pull the protective foil off the display.



5.2 Connecting and switching on

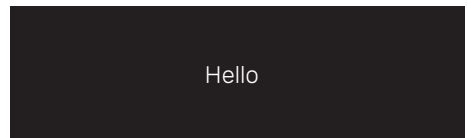
1. Connect the device to a socket using the mains cable.
2. Turn on the mains switch.



The device firmware starts.

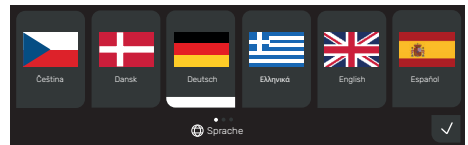


When you switch on the device for the first time, the device greets you with "Hello" in all available languages.



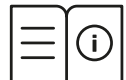
The device will then ask you for the desired language.

Select a language and tap the tick to continue.



A reference to the instructions for use appears.

Tap the tick to continue.



If the device is connected to **nova connect*** the device searches for existing data in the RUCK cloud.



One or more questions about the desired type of synchronisation with the RUCK cloud will appear.

Answer the questions and follow the instructions on the display.

* Only available with certain device variants.
Further information on this functionality can be found on page 56.

Operation and use

If no user profile is available yet (e.g. when switching on the device for the first time), the device prompts you to create a user profile. You can only continue once you have created a user profile.

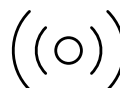
The firmware uses the first name and surname to form the initials that are shown on the display. You can change the initials later if required, see page 48.

You can also assign a colour to the user profile. To do this, tap the colour selection key and select one of the 7 colours.

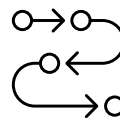
Tap the tick in the top right-hand corner to complete the process.



The **Radio connection** function is displayed. Here you can establish or update radio connections to devices or equipment that can then be controlled by the podiatry drill. See also page 43.



When you switch on the device for the first time and the synchronisation function is switched off (deactivated), short video clips appear showing the most important functions of the device. You can also skip the video clips by tapping the cross at the bottom right.



The device is now ready for operation.

As soon as you have inserted an instrument (see page 58), you can start treatment.

Information on operating the display can be found in the following section.

5.3 Display with touch functionality

The display is touch-sensitive. You can select functions and change values by tapping and swiping with your finger. You can also wear disposable gloves made of nitrile, latex or vinyl.



IMPORTANT

Operate the display with your finger only. Operating the display with hard objects can scratch or damage the surface.

5.4 Main views of the display

There are 2 main views that you can easily switch between:

1. **nova PRO basic view**, see page 34.
2. **nova PRO favourites view**, see page 38.



Switch between the main views

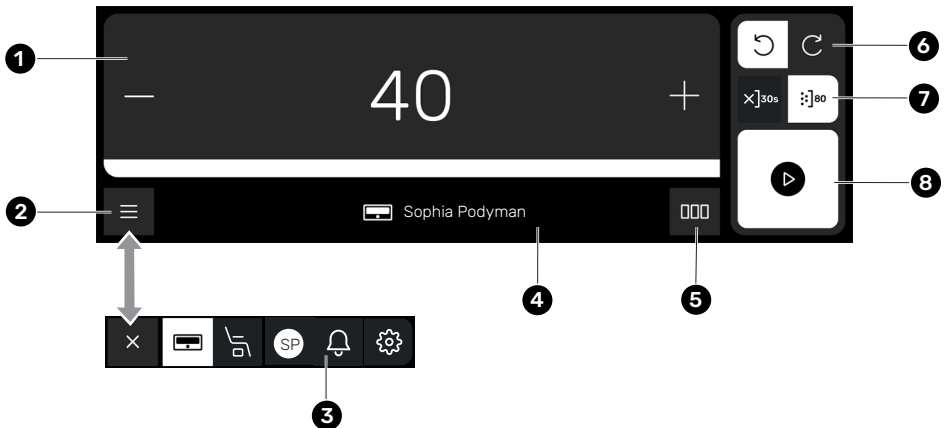
Operation and use

5.6 Standby mode

After 30 minutes of inactivity, the display turns black and the device is in standby mode. The display becomes active again when touched.

Standby mode may also have been activated manually or automatically. Information on activating standby mode can be found on page 44.

5.5 The nova PRO basic view

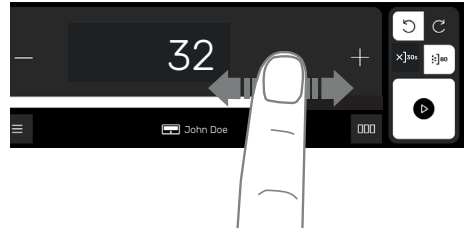


The nova PRO basic view

- | | |
|--|--|
| <p>1 Elements for displaying and manually setting the speed</p> <p>2 Fold-out navigation key</p> <p>3 Navigation elements, see page 41</p> <p>4 Navigation and info bar</p> <p>5 Favourites key:
Switch to the nova PRO favourites view, see page 38</p> | <p>6 Selection of the direction of rotation</p> <p>7 Right key:
Selection of suction power (in %)
Left key:
Switch off the suction function.</p> <p>8 Start/Stop key for the handpiece motor</p> |
|--|--|

5.6.1 Setting the speed

The displayed number multiplied by 1000 is the current speed in revolutions per minute (RPM). You can change the speed using the + and - keys or by swiping from left to right or right to left.



WARNING



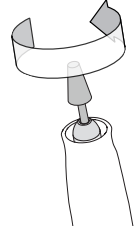
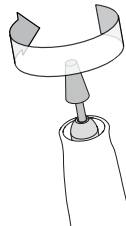
Always work at the speeds specified by the instrument manufacturer.

Excessive speed can lead to deformation or breakage of the instrument. This endangers the person being treated and yourself.

5.6.2 Setting the direction of rotation

Tap on the corresponding arrow symbol, to select the direction of rotation.

You can change the direction of rotation before switching on the handpiece motor or when the motor is already running.



Operation and use

5.6.3 Setting the suction power

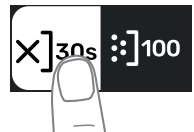
If you tap the key for the suction power (right key), other available suction powers are displayed. 5 levels are available: 20 % suction power up to 100 %.

Tap the desired value to change the suction power.



To collect sample material, you can also switch off the suction function completely for a short time. The duration for which the suction function is switched off is limited to 30 seconds. After this time, the suction stops and the handpiece motor switches off.

Tap the left key to temporarily switch off the suction function.



WARNING

Work at high suction power for as long as possible and only switch off the suction function completely for as long as necessary.

High suction power keeps the room air clean and reduces the risk of transferring potentially pathogenic particles and abrasive dust.

A high suction power also keeps the device cool and increases the service life of the device.

5.6.4 Switching on and off the handpiece motor

Remove the handpiece from the handpiece tray. The handpiece motor can only be started when the handpiece is not in the handpiece tray.



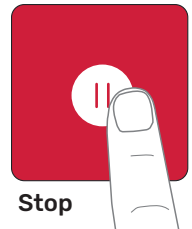
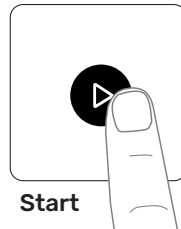
WARNING

Only switch on the handpiece motor when you are holding the handpiece securely in your hand. The handpiece could otherwise make uncontrolled movements.

Tap the start/stop key to switch on the handpiece motor.

As long as the engine is running, the start/stop key is red.

Tap the red start/stop key to switch off the handpiece motor.



If you switch to a menu in which the start/stop key is not displayed (e.g. in the "Settings" menu), the motor switches off automatically.

You can also set the device so that the handpiece motor starts automatically when you remove the handpiece from the handpiece tray, see page 46.

The start/stop key then contains the symbol **A** (for automatic).



Operation and use

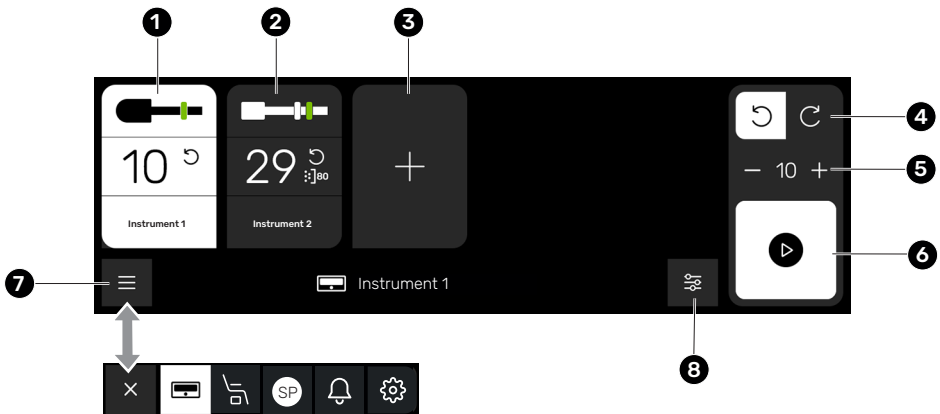
5.7 The nova PRO favourites view

In the **nova PRO favourites view**, you can quickly access saved values for specific instruments on the podiatry drill. One set of saved values is called "Favourite". You can define up to 30 favourites per user profile.

Favourites must be created for favourites to be visible in this view, see page 40.

The selected, active favourite is highlighted in white.

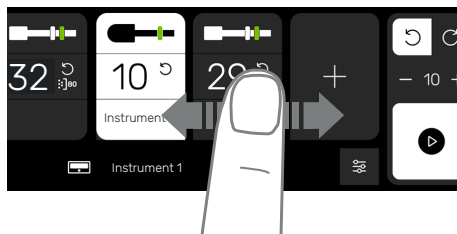
On the right-hand side are keys for manually selecting the direction of rotation and speed. If you change the direction of rotation or speed manually, an active favourite is deactivated.



The nova PRO favourites view

- 1 Active favourite
- 2 Inactive favourite
- 3 PLUS key to create a favourite
- 4 Selection of the direction of rotation
- 5 Selection of the speed via the + and - keys
- 6 Start/stop key for the handpiece motor
- 7 Fold-out navigation key, see page 41
- 8 Switch to the nova PRO basic view, see page 34

When 5 favourites have been created, the PLUS key for creating a favourite moves to the right. Swipe your finger to the left to display the key again. In this way, you can also see more favourites if more than 5 favourites are available.

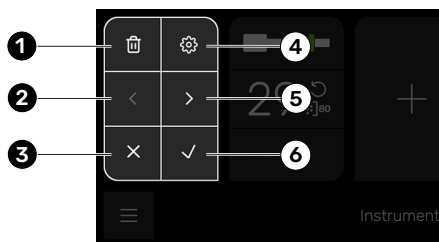


5.7.1 Moving, editing or deleting a favourite

If a favourite is selected (highlighted in white), you can edit the favourite. Tap the favourite for 2 seconds to display the editing options.

The options are displayed in a window above the favourite to be edited.

2 seconds



Editing options in the nova PRO favourites view

- 1 Deletes the favourite.
- 2 Moves the favourite to the left (inactive in the figure).
- 3 Cancels processing.
- 4 Activates the edit function, see page 40.
- 5 Moves the favourite to the right.
- 6 Confirms the position of the favourite.

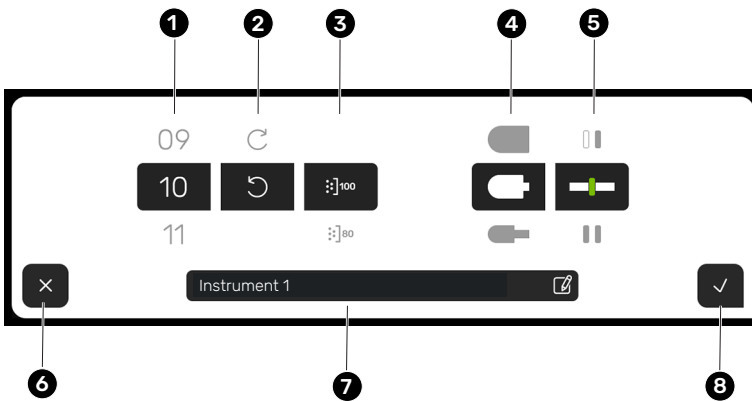
Operation and use

5.7.2 Creating favourites

Creating favourites is simple and intuitive. All essential values that are to apply to a specific instrument can be defined.

Tap the PLUS key to switch to the editing view.

As soon as you switch to the editing view, the handpiece motor stops automatically.



nova PRO favourites – Editing view

- | | | | |
|---|---|---|---|
| 1 | Selection of the speed | 5 | Selection of the symbol of the marker rings for the shank of the instrument |
| 2 | Selection of the direction of rotation | 6 | Cancel |
| 3 | Selection of suction power (in %) | 7 | Field for text input |
| 4 | Selection of the symbol for the instrument head | 8 | Confirm |

5.8 Navigation elements

You can use the navigation elements to switch to different menus or devices. The active menu or device is displayed in black on a white background.



Podiatry drill

Activates operation of the podiatry drill.

If the device is equipped with the **nova connect** function, a small cloud appears on the symbol of the podiatry drill.

If the device is connected via mobile radio, the cloud is green. If there are connection problems, the cloud is white.

For further information on the **nova connect** function, see page 56.



Podiatry couch

Activates the operation of a podiatry couch connected via radio, see page 51.



User profile

Displays all created user profiles and allows you to switch between user profiles and create new user profiles, see page 55.



Messages

Displays active information or warning messages, see page 89.



Settings

Calls up the **Settings** menu, see page 42.

As soon as you switch to a view in which the start/stop key for the handpiece motor is no longer visible, the handpiece motor stops automatically. The automatic switch-off of the motor is for your safety.


Operation and use

5.9 Functions in the "Settings" menu

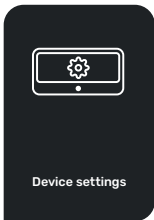
Via the **Settings** menu, you can call up device information, establish a radio-linked connection to devices and navigate to other menus.

Navigation:



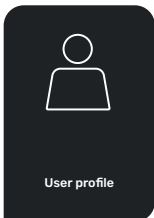
 = Back to the previous menu.

As long as the **Settings** menu or one of its submenus is visible, the handpiece motor is switched off. The automatic switch-off of the motor is for your safety.



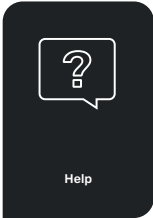
Device settings

Calls up the **Device settings** menu, see page 44.



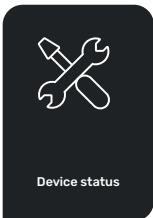
User profile

Calls up the **User profile** menu, see page 48.



Help

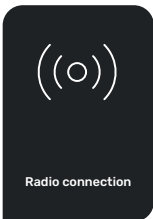
Calls up the **Help** menu, see page 50.



Device status

Displays the following information about the device:

- › Filling level of the dust filter bag
- › Operating hours until the HEPA filter change
- › Operating hours of the device
- › Operating hours until the next maintenance
- › Software version
- › Firmware version



Radio connection

Enables radio-linked connections to be established to devices or equipment that can be controlled by the podiatry drill.

For example, a radio connection can be established to a specially equipped podiatry couch.

Prerequisite: The **radio connection ON - OFF** function in the **Device settings** menu is activated (switched on).


Tap on **Search for radio connection** and then tap on a displayed device to establish a radio-linked connection.

The function is only visible if you are logged in with the "ADMIN" (administrator) profile property.


Operation and use

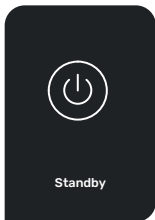
5.10 Functions in the "Device settings" menu

In the **Device settings** menu, you can activate locking functions for the display, set the brightness of the display and define functions for the handpiece tray.

 = Back to the previous menu.

Navigation:

 > **Settings** > **Device settings**

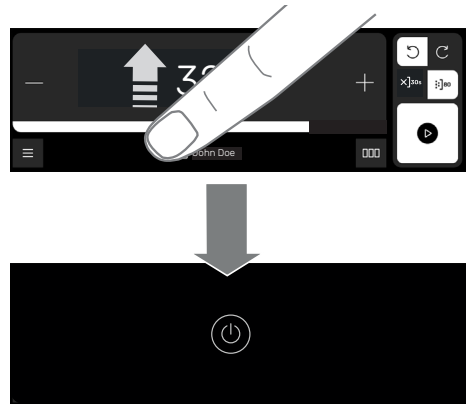


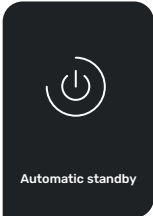
Standby

Switches the display off until it is reactivated by touching it. After activating the function, the standby symbol appears for 5 seconds. The display then goes black.

You can also call up standby mode with a gesture:

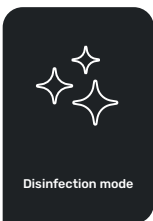
In any view, swipe upwards from the bottom edge of the display.





Automatic standby

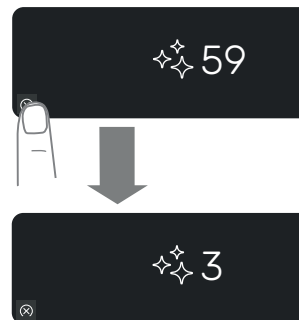
Allows you to set the length of time after which the display switches off automatically when not in use. Time values from 1 minute to 15 minutes can be set. The function can also be deactivated completely (OFF). After activating the function, the standby symbol appears for 5 seconds. The display then goes black.



Disinfection mode

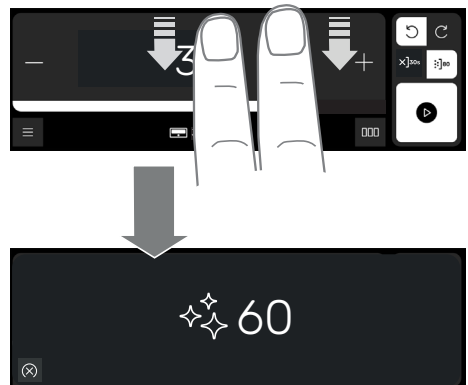
Locks the display for 60 seconds. During this time, the display can be cleaned or disinfected. As long as the lock is active, the remaining time of the lock is displayed (in seconds).

If you want to shorten the remaining time, you can tap the button at the bottom left. This reduces the remaining time of the lock to 3 seconds.

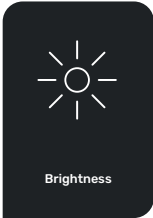


You can also call up disinfection mode with a gesture:

In any view, swipe down from the top edge of the display with 2 fingers.

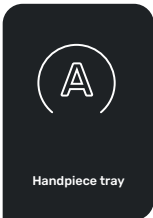


Operation and use



Brightness

Enables the brightness of the display to be adjusted.
8 brightness levels are available.

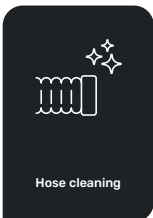
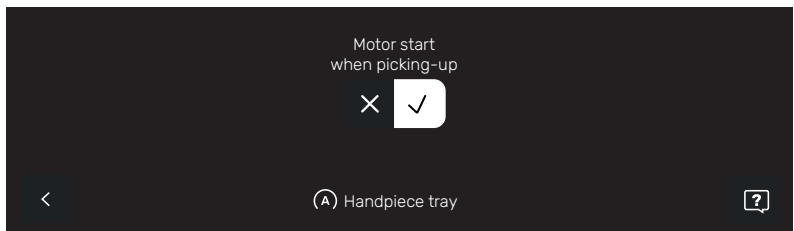


Handpiece tray

Enables the handpiece motor to be started via the handpiece tray.

The handpiece motor can be started automatically when the handpiece is lifted from the handpiece tray.

The symbol with a white background is active.



Hose cleaning

Timer function to remind you to clean the flexible suction hose.

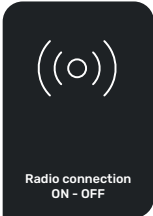
The function is only visible if you are logged in with the "ADMIN" (administrator) profile property.

You can set the timer to a value between 5 and 35 operating hours.

Factory setting: 20 operating hours.

You can also switch off the reminder completely.

Description of the removal of the suction hose: See page 74.



Radio connection ON - OFF

Enables the **Radio connection** function to switch on or off.

The function must be switched on in order to establish a radio connection to devices or equipment that can be controlled by the podiatry drill.

For example, a radio connection can be established to a designated podiatry couch.

Select **Search radio connection** or **Update radio connection** in the corresponding area of the **Settings** menu, see page 43.



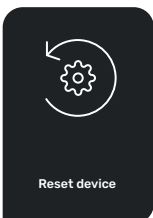
Synchronisation with the cloud*

Synchronising with an online storage (cloud), reserved for you, allows you to back up your settings outside the device.

These settings include user names, favourites created, the language of the user interface and the brightness of the display.

The function is only visible if you are logged in with the "ADMIN" (administrator) profile property.

* The function is only available if the device is equipped with the **nova connect** functionality. For information on the **nova connect**, see: page 56.



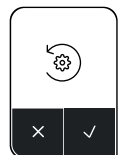
Reset device

Allows you to reset all device settings to the factory settings.

The function is only visible if you are logged in with the "ADMIN" (administrator) profile property.

Tap the tick to reset the device to factory settings.

Tap on the x to cancel the process.



Operation and use

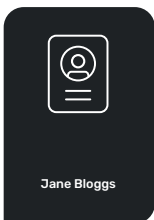
5.11 Functions in the "User profile" menu

In the **User profile** menu, you can make personalised settings.

 = Back to the previous menu.

Navigation:

 > **Settings** > **User profile**



Name of the user profile

The name of the active user is displayed.

Tapping the key opens a keypad where you can change the name, initials and background colour of the user profile.

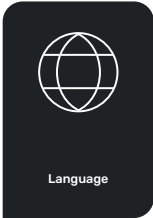
In addition to the shift key (bottom left), some languages also have a key for displaying language-specific special characters.



The user profile that was created during initial registration has the profile property "ADMIN" (administrator). The "ADMIN" profile property offers functions that are not available with a normal user profile.

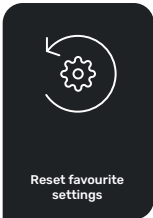
Additional functions:

- › Displaying and editing the **hose cleaning** function, see page 46.
- › Option to establish radio connections, see page 43.
- › Option to reset all device settings to the factory settings, see page 47.
- › Option to synchronise the user profiles with the RUCK cloud, see page 47.



Language

You can select the language of the displayed texts via a selection menu. The language of the texts in the selection menu is the respective national language.

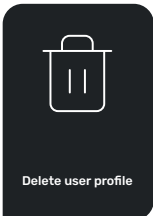
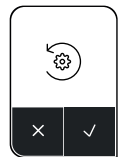


Reset favourite settings

Allows you to delete all favourites in the user profile.

Tap on the tick to delete all favourites.

Tap on the x to cancel the process.

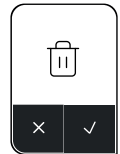


Delete user profile

Allows you to delete the user profile. The function is available for all user profiles except the user profile with the "ADMIN" property.

Tap on the tick to delete the user profile.

Tap on the x to cancel the process.




Operation and use

5.12 Functions in the "Help" menu

In the **Help** menu, you will find information to help you with various questions.

Navigation:

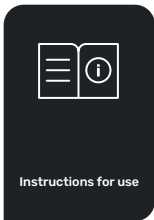
 > **Settings** > **Help**

 = Back to the previous menu.



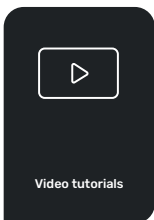
Getting to know the device

Short video clips show you the most important functions of the device.



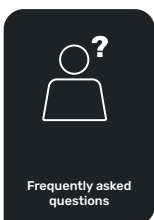
Instructions for use

Shows a link to a website as a QR code. Scan the link to access the electronic version of the instructions for use.



Video tutorials

Shows a link to a website as a QR code. Scan the QR code to access the RUCK video channel.



Frequently asked questions

Shows a link to a website as a QR code. Scan the QR code to receive answers to frequently asked questions. We are constantly updating and adding to this online collection of knowledge.

5.13 Operating a RUCK podiatry couch

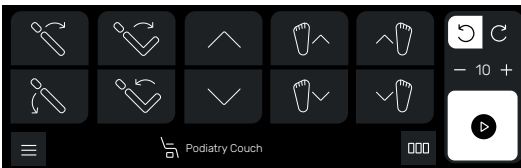
If you have a podiatry couch from RUCK that is equipped with a radio function, you can operate the podiatry couch via the display of the podiatry drill.

The podiatry couch must be connected to the podiatry drill via a radio connection, see page 43.

Tap on the couch icon in the navigation bar to display the keys for the podiatry couch.



5.13.1 Basic view for operating a podiatry couch



Basic view for operating a podiatry couch



Swivels the backrest of the podiatry couch forwards (upright position).



Swivels the backrest of the podiatry couch backwards (lying position).

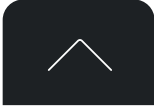


Swivels the backrest of the podiatry couch forwards together with the seat (upright position).

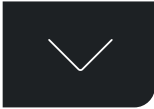


Swivels the backrest of the podiatry couch backwards together with the seat.

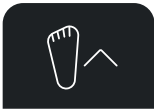
Operation and use



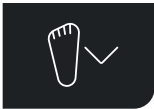
Moves the seat of the podiatry couch upwards.



Moves the seat of the podiatry couch downwards.



Swivels the right leg rest of the podiatry couch upwards. Only available with certain versions of the podiatry couch.



Swivels the right leg rest of the podiatry couch downwards. Only available with certain versions of the podiatry couch.



Swivels the left leg rest of the podiatry couch upwards. Only available with certain versions of the podiatry couch.

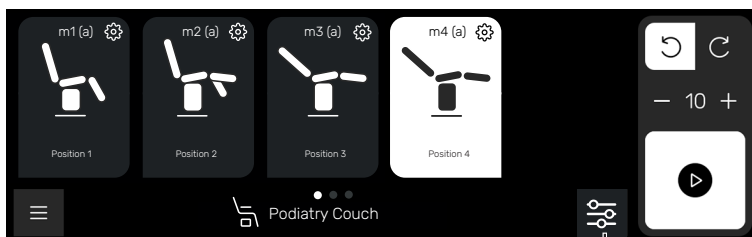


Swivels the left leg rest of the podiatry couch downwards. Only available with certain versions of the podiatry couch.



Switch to the favourites view of the podiatry couch, see page 53.

5.13.2 Favourites view of the podiatry couch



Favourites view of the podiatry couch

Switch to the basic view of the podiatry couch, see page 51.

The podiatry couch's favourites view allows you to save positions of the podiatry couch's movable elements and call them up as required.

The positions (= favourites) correspond to the positions that can be called up via the memory buttons (m = memory) on the podiatry couch:

m1 (a) to m4 (a) = The 4 positions available to operator **a** are stored.

m1 (b) to m4 (b) = The 4 positions available to operator **b** are stored.

m1 (c) to m4 (c) = The 4 positions available to operator **c** are stored.

Swipe from right to left or vice versa to display 4 favourites at a time.

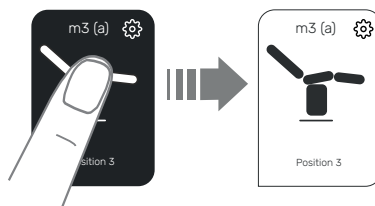
Any changes you make here are automatically adopted by the connected podiatry couch. Conversely, changes that you have made to a connected podiatry couch are also updated here.

Activating a saved position

Tap on a tile to move to the corresponding position.

The tile turns white.

Keep your finger on the tile until the position is reached. When the position is reached, the tile remains white.



Operation and use

Changing a saved position (a favourite)

The position of a favourite cannot be changed directly, but is done by deleting an existing favourite and creating a new favourite.

Delete a favourite using the edit function: see below.

A tile with a PLUS symbol is displayed in place of the deleted favourite.

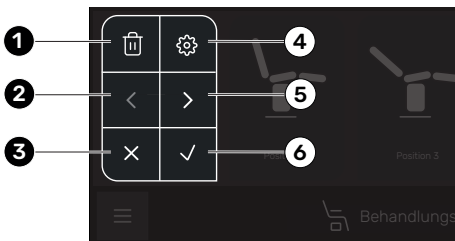
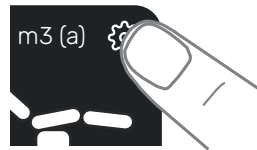
1. Move the podiatry couch to the desired position in the basic view.
2. Tap on the PLUS symbol to create the new favourite.



Editing a favourite (changing the name or position of the tile)

Tap on the cogwheel symbol of a tile to change the name of a favourite or the position of the corresponding tile, or to delete the favourite completely.

Select the appropriate editing option.



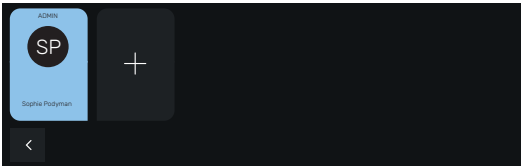
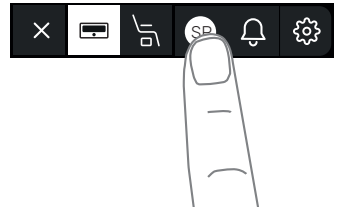
Editing options in the favourites view

- 1 Deletes the favourite.
- 2 Moves the favourite to the left (inactive in the figure).
- 3 Cancels processing.
- 4 Shows the keypad.
- 5 Moves the favourite to the right.
- 6 Confirms the position of the favourite.

5.14 Creating user profiles / switching between user profiles

Tap on the circle with the initials in the navigation bar to display all the user profiles you have created.

When you call up the menu for the first time, only one user profile appears. This user profile has the profile property "ADMIN" (administrator), see page 48.



Tap the PLUS key to create another user profile.

Multiple user profiles can be helpful if several people work alternately with the device. Each person can define his/her own favourites in the user profile. Favourites are only available in the User profile.



Up to 30 user profiles can be created.

Tap on the corresponding tile to change the user profile.

Switch to the **User profile** menu if you want to change the properties (e.g. the colour) of the user profile or if you want to delete a user profile, see page 48.

Operation and use

5.15 Extended functionality through "nova connect"



5.15.1 "nova connect" for faster service and more convenience

The podiatry drill is equipped with an additional function for some regions: **nova connect** speeds up and simplifies communication with the RUCK service department and allows you to save settings in a cloud and reload them if necessary.



To make this possible, the device is equipped with a SIM chip. This enables the device to communicate with RUCK servers via mobile radio.

The use of mobile radio is free of charge for the owner or user of the device. All costs in connection with **nova connect** will be borne by RUCK.

When the device has established a connection via mobile radio, a small green cloud appears on the podiatry drill icon.



If the device cannot establish a connection, the cloud appears in white. The connection is usually only temporarily interrupted. The device constantly tries to re-establish the connection.



5.15.2 Regions in which "nova connect" can be used

The functionality is available in all countries in which a corresponding licence is available. A list of these countries can be found in a separate reference list.



If the device is in an unsuitable location or if there are problems with the network provider, the establishment of a mobile radio connection may be restricted or permanently impossible.

5.15.3 Data privacy protection

If you use the cloud function, the device saves the user name you have entered on a RUCK server.

This personal data can only be used by you. The data cannot be viewed by RUCK employees or third parties. The protection of your data is guaranteed.



5.15.4 Application areas of "nova connect"

A device that is equipped with **nova connect** has the following additional features:

1 - Update the firmware or software

If necessary, RUCK updates the firmware or software of the device. This ensures that the device is always up to date. This ensures maximum operational safety. There is no need to send in the device to update the firmware or software.



If a new version of the firmware or software is available, a message appears on the display. Then, follow the information on the display.

2 - Support in the event of problems by transmitting the device status and device data

The device continuously sends data to the RUCK server. Our service staff is therefore able to assess the condition of the device and help quickly and efficiently with any questions or problems.



3 - Backing up settings in a cloud using the "Synchronisation with the cloud" function

If you have activated the "Synchronisation with the cloud" function, the user profile settings are saved in a special area of a RUCK server (cloud). This data includes user names, favourites created, the language of the user interface and the brightness of the display. You can activate or deactivate the function in the **Settings > Device settings**, see page 47.

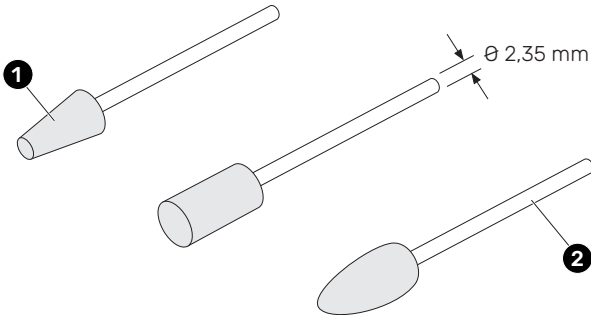


The advantage of saving this data in the cloud is that you can also use settings that you have saved on your device on other devices of the same type. This can be helpful, for example, if you have received a rental device from us. After activating synchronisation, your settings are available on the rental device and you can work with your usual favourites.

Operation and use

5.16 Instruments

The device is supplied without instruments. These tools, also known as "rotary instruments", consist of an application part (**1**) and a shank (**2**).



The shape, composition and size of the application part determine the intended use. Depending on the intended use, the instruments are also called "burs", "grinders" or "polishers".

5.16.1 Usable instruments

High-quality, suitable and undamaged instruments are a basic prerequisite for safe, effective and gentle treatment and for a long service life of the device. Only use instruments with the following properties:

- > standardised, cylindrical shank with a diameter of 2.35 mm (2.334 mm to 2.350 mm) (TYPE 2, in accordance with DIN EN ISO 1797:2017-09)
- > minimum diameter of the working part (bur body/grinding body): 0.5 mm
- > maximum diameter of the working part (bur body/grinding body): 16 mm
- > labelled as a medical device (CE)
- > straight shank (not bent)
- > undamaged working part

You can find suitable instruments on our websites:

hellmut-ruck.de

ch.hellmut-ruck.de (Switzerland)

hellmut-ruck.uk (United Kingdom)



hellmut-ruck.uk



WARNING

Only use instruments that are labelled as medical devices.

Only use undamaged, undistorted and disinfected instruments.

Unsuitable instruments endanger the person being treated and yourself.

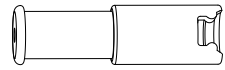
A deformed or damaged instrument can also lead to unpleasant vibrations of the handpiece.

If germ-intensive work has been carried out, uncontaminated skin and nail areas must be treated with instruments that have been specially reprocessed (sterilized) for this purpose during the next work process.

The cleaning, disinfection or reprocessing of the instruments used must be carried out in accordance with the manufacturer's instructions.

Tip:

To check the diameter and straightness of the shank of an instrument, you can use the pull-off aid.



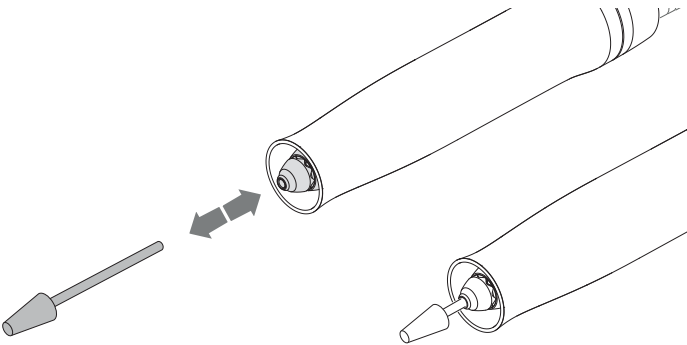
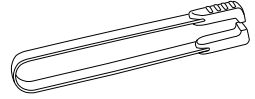
Operation and use

5.16.2 Inserting an instrument into the handpiece

The instrument is held in the handpiece by the interchangeable clamping head. When the handpiece motor is switched off, the instrument can simply be pulled out of or pushed into the interchangeable clamping head.

For instruments with a particularly thin or tapered working part, we recommend using our cutter pliers (item no. 2126401).

When inserting an instrument, make sure that the shank is pushed in as far as it will go.



5.16.3 Changing an instrument



CAUTION

Only change an instrument when the handpiece motor is switched off and the instrument is no longer rotating. Risk of injury. The instrument continues to run briefly after the handpiece motor is switched off.

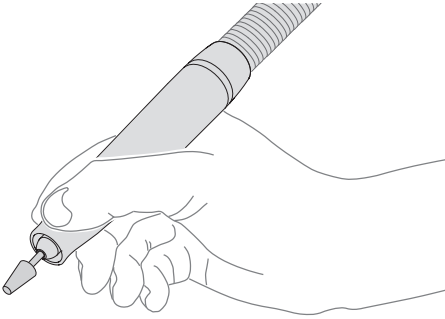
If you pull an instrument out of the interchangeable clamping head or insert it into the interchangeable clamping head while the motor is running, the service life of the interchangeable clamping head will also be reduced.

Set the appropriate speed for the instrument being used. Always work at the speed specified by the instrument manufacturer.

5.17 Ergonomic holding of the handpiece

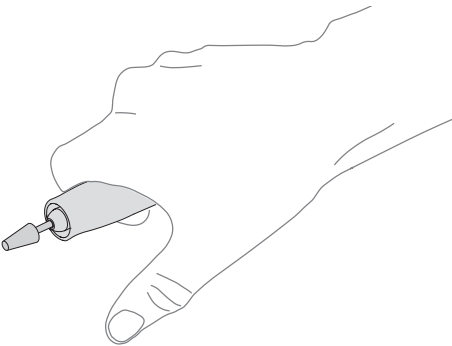
5.17.1 Pen holding position

Fine work can be carried out ergonomically and precisely in the pen holding position.



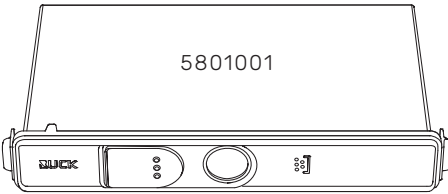
5.17.2 Overhand grip

When carrying out surface work, gripping the handpiece from above and supporting it with the thumb makes for accurate and relaxed working.



Operation and use

5.18 Changing the dust filter bag

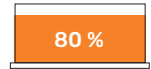
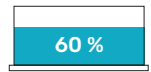


The dust filter bag (item no. 5801001) should be replaced when it has reached a filling level of 80 %. From 80 %, the suction power of the device decreases progressively.

The device issues a corresponding message from a filling level of 60 %. You will then have enough time to plan the change.

From a filling level of 80 %, the device issues a further message.

Change the dust filter bag at the latest when the filter is completely full (100 %). The capacity is sufficient for up to 150 treatments.



WARNING

Only use original dust filter bags. Only use each dust filter bag once. Do not empty the dust filter bags filters in order to use them several times.

Wear a suitable respirator when changing the dust bag filter. This minimises the risk of infection from potentially pathogenic grinding dust.

5.18.1 Changing the dust bag filter when the device is switched on

You can change the dust filter bag when the device is switched on. However, the handpiece motor must be switched off. When the device is switched on, the display shows messages during the process. Follow the information on the display.

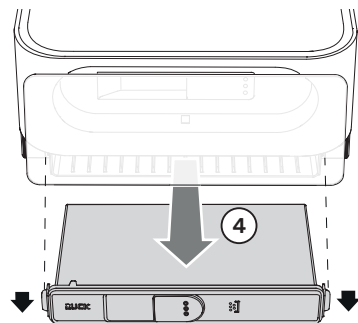
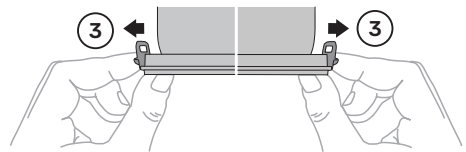
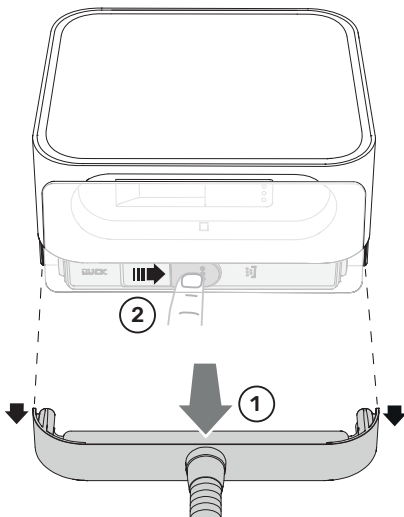
5.18.2 Removing a full dust filter bag



IMPORTANT

Do not pull on the suction hose to remove the cover of the dust filter bag. This can damage the suction hose or the connection between the suction hose and the cover and cause it to leak. A leak reduces the suction power at the handpiece.

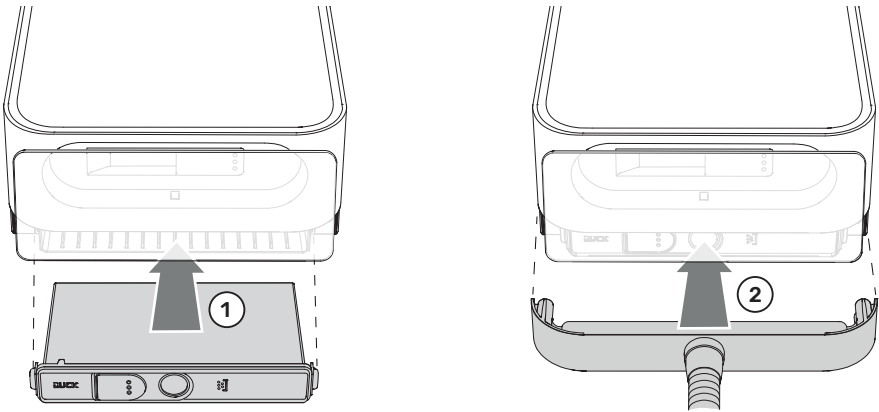
1. Grasp the cover of the dust filter bag on the left and right. Pull the cover (together with the hose hanging from it) out of the main unit. When the device is switched on, the message **“The cover of the dust filter bag is open”** appears. The message disappears when you have reinserted the cover.
2. Slide the sealing tab over the opening of the dust filter bag to seal the dust filter bag.
3. Bend the side flaps of the dust filter bag slightly outwards (with your index fingers) to unlock the dust filter bag. This requires a certain amount of strength.
4. Pull the dust filter bag out of the filter slot.
5. Dispose of the dust filter bag.



Operation and use

5.18.3 Inserting a new dust filter bag

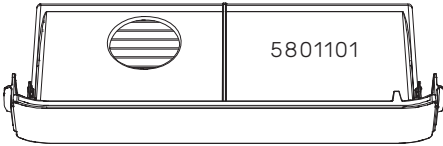
1. Slide the new dust filter bag into the filter slot until you hear the side tabs click into place.
The dust filter bag is not symmetrical. Pay attention to the correct orientation when inserting.
2. Slide the cover (together with the hose hanging from it) into the main unit.



When the device is switched on, the message **“Filter change: dust filter bag”** appears after inserting the cover.

Answer the question after you have changed the filter.

5.19 Changing the HEPA filter



The HEPA filter (item no. 5801101) should be replaced when it has reached 390 operating hours. From 390 operating hours, the suction power of the device decreases progressively.

The device issues a corresponding message after just 370 operating hours (change note 1). You will then have enough time to plan the change.

After 390 operating hours, the device issues a further warning (change note 2).

Change the filter after 400 operating hours at the latest.



WARNING

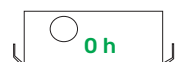
Only use original HEPA filters. Only use each HEPA filter once.

Wear a suitable respirator when changing the HEPA filter to minimise the risk of infection from potentially pathogenic grinding dust.

5.19.1 Changing the HEPA filter when the device is switched on

You can change the HEPA filter when the device is switched on. However, the handpiece motor must be switched off. When the device is switched on, the display shows messages during the process. Follow the information on the display.

Once you have made and confirmed the change, the operating hours counter of the HEPA filter is reset to 0 (zero).



Operation and use

5.19.3 Changing the HEPA filter when the device is switched off or when the display is inactive

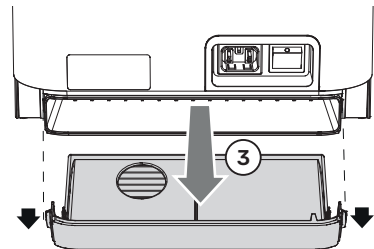
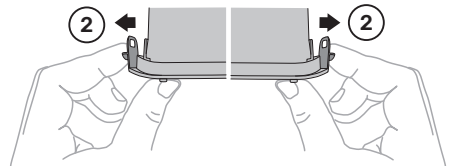
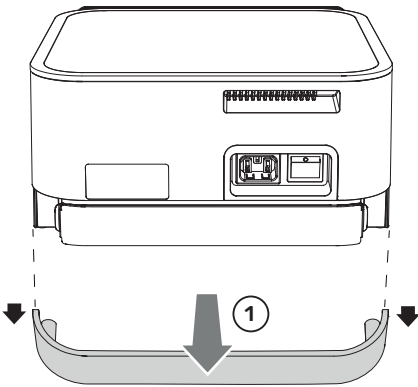
If you have changed the HEPA filter when the device is switched off or the display is inactive, the device has not registered the change.

If more than 400 operating hours have passed since the last confirmed change, the message **"The HEPA filter is full."** appears the next time you switch on or activate the display.

You can then reset the counter by answering the question positively after a filter change has been carried out.

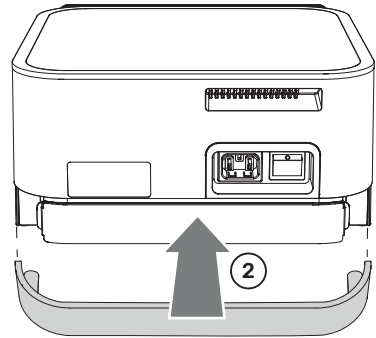
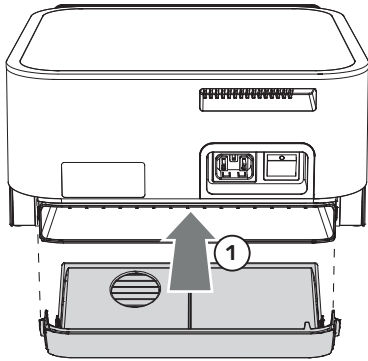
5.19.2 Removing a full HEPA filter

1. Grasp the cover of the HEPA filter on the left and right. Pull off the cover.
2. Bend the side tabs of the HEPA filter slightly outwards (with your index fingers) to unlock the HEPA filter. This requires a certain amount of strength.
3. Pull the HEPA filter out of the filter slot.
4. Dispose of the HEPA filter.



5.19.4 Inserting a new HEPA filter

1. Slide the new HEPA filter into the filter slot until the side tabs click audibly into place. The filter is not symmetrical. Pay attention to the correct orientation when inserting.
2. Slide the cover into the main unit.



When the device is switched on, the message “**Filter change: HEPA filter**” appears after inserting the HEPA filter.

Answer the question after you have changed the filter. A positive response resets the operating hours counter of the HEPA filter to 0 (zero).



Operation and use

5.20 Integrity of the main unit

Apart from the dust filter bag and the HEPA filter, the main unit does not contain any parts that can be replaced by the operating personnel. Do not open the main unit. If the device is opened, all rights under the terms of the warranty are void!

5.21 Switching off

To switch off the device, simply disconnect it from the mains supply. To do this, you can switch off the mains switch or pull out the mains plug.

Make sure that the mains switch and the mains plug are easily accessible so that the device can be quickly disconnected from the mains in the event of danger.

6 Maintenance and warranty

6.1 Regular maintenance by RUCK service department

The podiatry drill is a medical device and is therefore subject to special requirements. Safety and reliability of the product can only be permanently guaranteed if certain components are regularly checked or replaced by specialists. In such cases, worn parts will be replaced with original spare parts.

We therefore recommend that you have the product serviced by the RUCK service department **every 1200 operating hours** or **every 36 months** – whichever comes first.

This maintenance includes an electrical safety inspection in accordance with DIN EN 62353.

If 1160 or more operating hours have passed since the last maintenance, the device will remind you that maintenance is due.

RUCK service department: HELLMUT RUCK GmbH, Daimlerstr. 23, DE-75305 Neuenbürg, Germany
Tel. +49 7082 9442 255
Fax +49 7082 9442 259
after-sales@hellmut-ruck.uk



IMPORTANT

Operating the podiatry drill without the necessary regular maintenance is at your own risk.

Maintenance and repairs may only be carried out by authorised specialists. Exception: Components whose replacement is described in these instructions for use. These components can also be replaced by the operators.

We do not assume any liability or warranty for lack of maintenance or unauthorised maintenance or repairs.

Maintenance and warranty

6.2 Regular maintenance by the operating personnel

6.2.1 Overview

Interval	Element	Task
Before each treatment	Prepare cleaned and disinfected instruments. If necessary: Prepare reprocessed (sterilised) instruments.	
After each treatment	The outer surfaces of the handpiece, the display unit and the main unit	Cleaning and disinfecting (wipe disinfection)
At the end of the working day	Outside of the flexible suction hose	Cleaning and disinfecting (wipe disinfection)
At the end of the working day	Chuck, handpiece motor and inside of the handpiece sleeve	Cleaning and disinfecting (wipe disinfection)
At the end of the working day	Main unit, handpiece, flexible suction hose, mains cable	Visual inspection (check for cracks and damage)
Every 20 operating hours (1 time per month)	Inside of the flexible suction hose	Cleaning and disinfecting (disinfection bath)



WARNING

Clean and disinfect the device at the specified intervals. Insufficient disinfection can lead to transmission of disease. Please also observe the guidelines and recommendations of the national competent body for hygiene and disinfection.

6.1.1 Cleaning and disinfection

You can leave the device switched on to clean the outer surfaces. However, do not use any liquids or sprays. Use the “Disinfection mode” function to clean the display when the device is switched on, see page 45.



WARNING

Do not use any liquids or sprays for cleaning and disinfecting.

Danger of electric shock.

6.2.2 Suitable agents for cleaning and disinfection

Use alcohol-based RUCK surface disinfectant wipes (item no. 2966201, 2967601 or 2970901) for cleaning and disinfecting.

Allow sufficient time for cleaning and drying.

Exposure times for disinfectants:

1 minute for bacteria

5 minutes for fungi

Drying:

The surfaces must be completely dry before the next treatment. Allow the surfaces to air dry. Do not wipe to dry the surfaces.

Further information can be found on the disinfectant.



IMPORTANT

Unsuitable utensils for cleaning and disinfecting can alter the colour, texture and properties of surfaces and damage components.

Do not use any scouring agents, such as abrasive cleaners, cleaning sponges or similar items that may contain abrasive particles. Even cleaning cloths with plastic fibres can have an abrasive effect and consequently they can damage the surfaces.

Ensure that the cleaning utensils used are clean. Mineral soiling such as grains of sand and dust in the cleaning utensils can scratch surfaces.



IMPORTANT

The cleaning, disinfection or reprocessing of the instruments used must be carried out in accordance with the manufacturer's instructions.

Maintenance and warranty

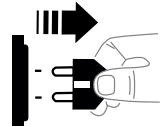
6.2.3 Cleaning and disinfection of the chuck, handpiece motor and the inside of the handpiece sleeve



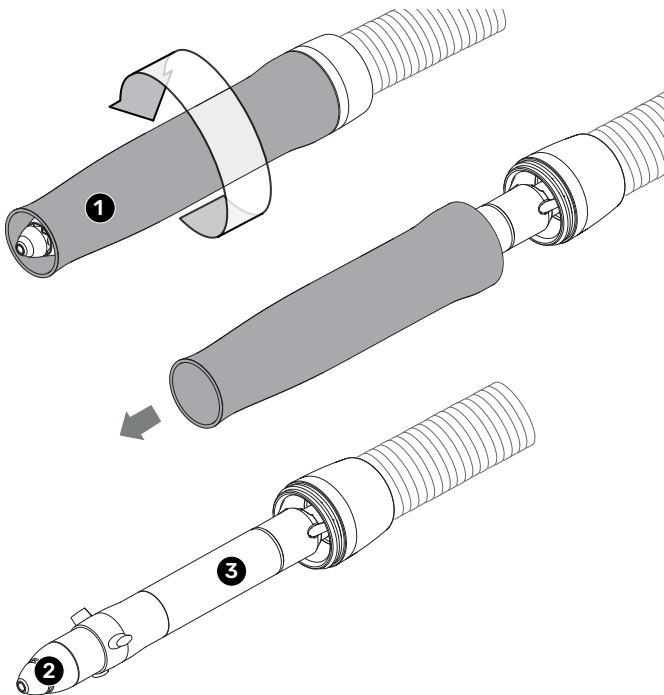
WARNING

Disconnect the device from the mains supply.

Danger of electric shock.



Unscrew the handpiece sleeve to expose the chuck (coupling and interchangeable clamping head) and the handpiece motor. These elements and the inside of the handpiece sleeve can now be cleaned and disinfected.



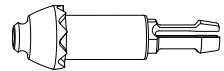
- 1 Handpiece sleeve
- 2 Chuck
- 3 Handpiece motor

6.3 Replacing the interchangeable clamping head of the handpiece

After a long period of use, it is possible that the interchangeable clamping head no longer holds an inserted instrument sufficiently, which means that the instrument no longer rotates when the handpiece motor is switched on, or that the instrument can no longer be inserted into the chuck. This deterioration in the function of the interchangeable clamping head is normal and no reason for a complaint.

If the interchangeable clamping head no longer fulfils its function, you can easily replace it yourself.

Only use suitable and undamaged instruments in order to achieve a long service life for the interchangeable clamping head.



Item no. 58017011



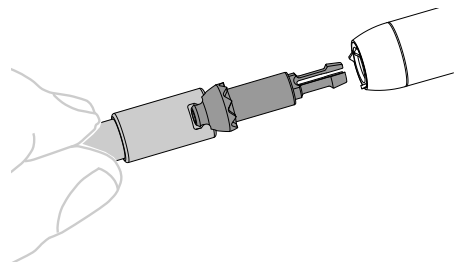
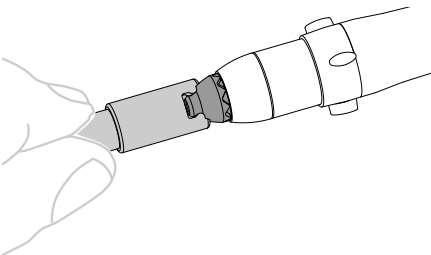
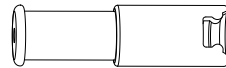
WARNING

Contaminated dust particles can be released when the interchangeable clamping head is replaced. Therefore, wear suitable mouth and nose protection.

Disinfect the workstation and the device afterwards using a suitable surface disinfectant.

Unscrew the handpiece sleeve from the suction hose to access the interchangeable clamping head.

Use the supplied removal aid to pull the interchangeable clamping head out of the handpiece body.



Maintenance and warranty

6.4 Cleaning the flexible suction hose and motor cable

Clean the inner area of the flexible suction hose and the motor cable at least every 20 operating hours. A clean suction hose helps to maintain high suction power and prevents the accumulation of large quantities of potentially pathogenic particles.

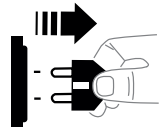
After cleaning the suction hose in a disinfection bath, the hose must dry before it can be reinstalled. Drying time: approx. 12 hours. If you clean the suction hose in the evening, you can reinstall it in the morning.



WARNING

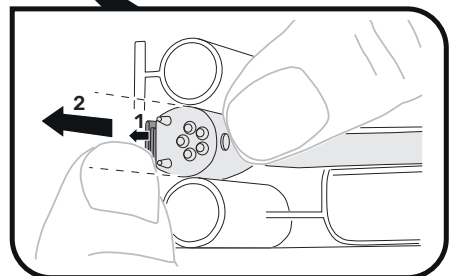
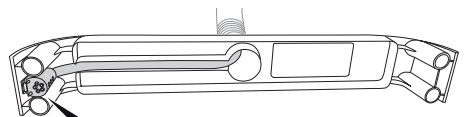
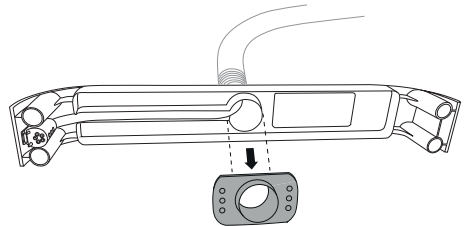
Disconnect the device from the mains supply.

Danger of electric shock.



6.4.1 Removing the suction hose and motor cable

1. Disconnect the device from the mains supply.
2. Pull the front cover (together with the hose hanging from it) out of the main unit.
3. Pull the plug-in tube off the cover.
4. Press the locking tab **(1)** away from the motor cable plug and slide the plug out of the holder **(2)**.

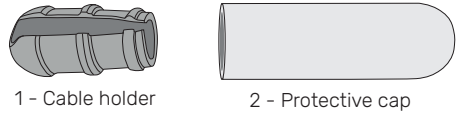


Maintenance and warranty

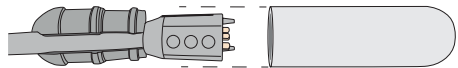
To prevent the motor cable from getting tangled when pulling it out of the suction hose and then pushing it back into the suction hose, it is helpful to use the enclosed cable pull-in aid.

The cable pull-in aid consists of 2 parts and forms a capsule around the plug of the motor cable.

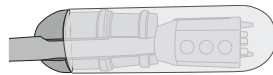
Cable pull-in aid



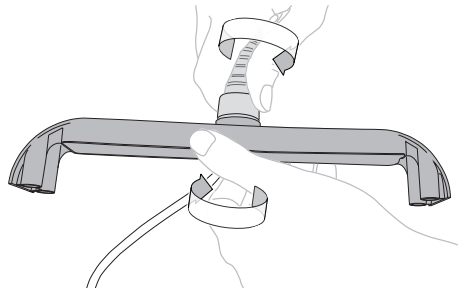
5. Press the motor cable by the plug into the cable holder of the cable pull-in aid.



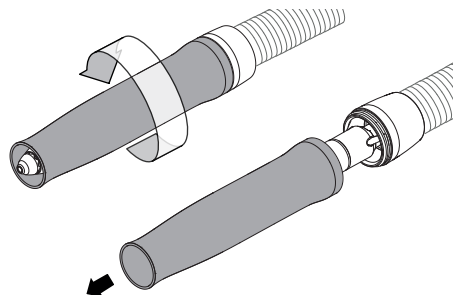
6. Slide the protective cap over the plug until the protective cap and the cable holder form a single unit.



7. Unscrew the cover from the suction hose.

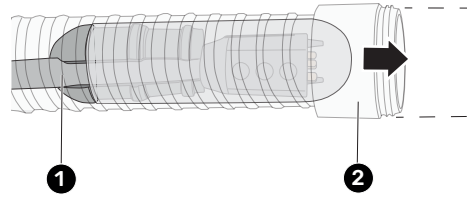


8. Unscrew the handpiece sleeve from the suction hose.



Maintenance and warranty

9. Hold the handpiece motor with one hand and pull the suction hose (2) off the motor cable (1) with the other hand.



6.4.2 Cleaning and drying

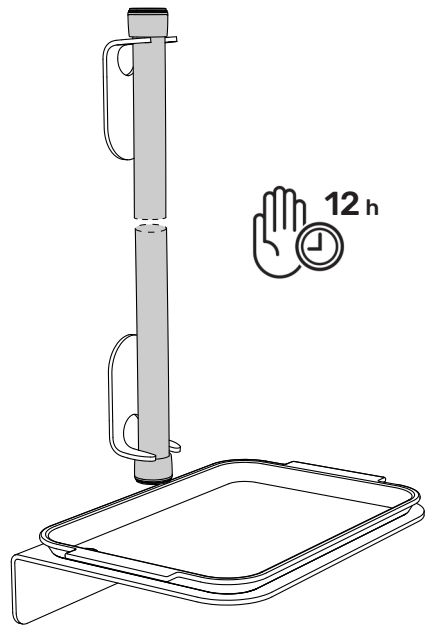
Clean the motor cable with disinfectant wipes.

Place the hose in a disinfectant bath to clean the inside of the hose.

Hang the hose vertically so that it can dry properly. Allow the hose to dry for at least 12 hours, for example overnight.

Ensure that the air in the room can circulate well and ventilate the room whenever possible. High humidity and poor air circulation prolong the drying time.

To hang the hose vertically, we recommend using the accessory set for hose cleaning (item no. 5801901).



6.4.3 Assembly



IMPORTANT

Only reinstall the suction hose in the device when the **inside of the hose is completely dry**.

If the hose is still damp or wet, the moisture can damage filters and other components!



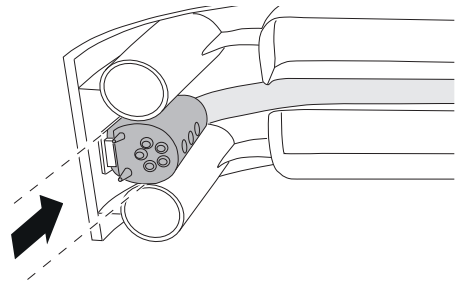
When the suction hose is completely dry, you can reassemble the hose and motor cable.

Assemble the individual parts in reverse order to removal.

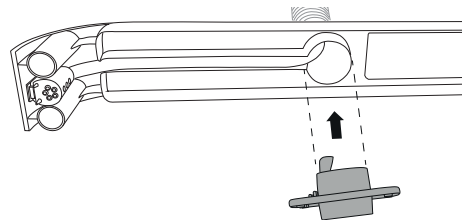
Pay attention to the following when installing the motor cable plug:

Push the plug into the guide on the cover **from above**. Do not push the plug in from the side.

The plug is seated correctly when the locking pin engages.



Make sure that you insert the plug-in tube correctly into the cover: The plug-in tube has a cut-out for the motor cable.

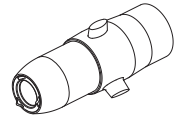


Maintenance and warranty

6.5 Replacing the coupling for the interchangeable clamping head

After a longer period of operation, the handpiece may make louder or different noises than at the beginning. In this case, the coupling for the interchangeable clamping head is worn and should be replaced.

You can carry out the replacement yourself:



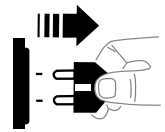
Item no. 4959301



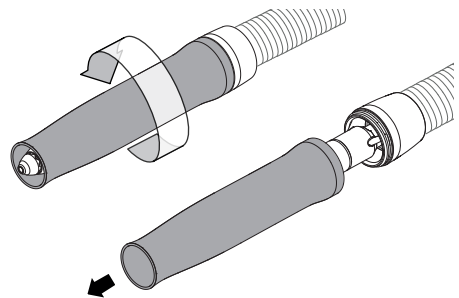
WARNING

Disconnect the device from the mains supply.

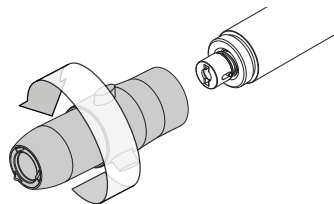
Danger of electric shock.



1. Unscrew the handpiece sleeve from the suction hose.



2. Unscrew the coupling from the handpiece motor.



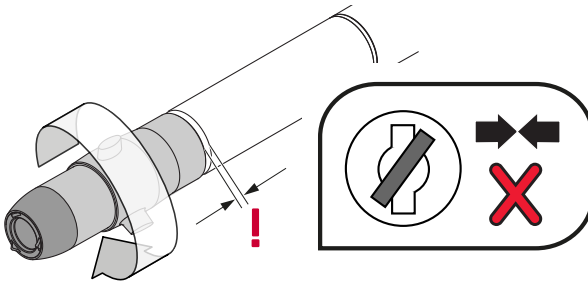
- Carefully screw the new coupling onto the motor.
Only turn the coupling **with light pressure**.
If you press too hard when turning, you will damage the coupling mechanism.

If you feel resistance when turning, **do not turn any further**, but turn the coupling back a quarter turn.

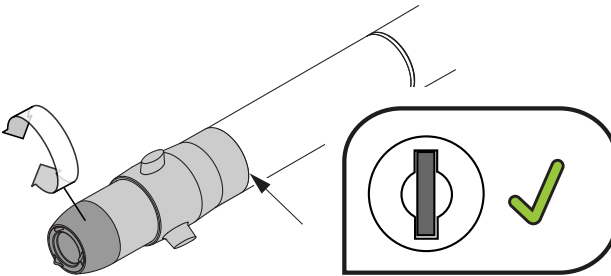
Then turn the tip of the coupling a quarter turn forwards or backwards.

Try screwing the coupling onto the motor again.

If necessary, repeat this several times until the coupling can be screwed onto the motor **without resistance**.



Resistance when turning the coupling: **Do not turn any further!** The parts of the coupling mechanism do not fit together.



No resistance when turning the coupling: Screw the coupling onto the motor until there is no gap between the two parts.

- Screw the handpiece sleeve back onto the suction hose.

Maintenance and warranty

6.6 Replacing the handpiece motor

After a longer period of operation, the handpiece may make louder or different noises than at the beginning. The problem is usually solved by replacing the coupling for the interchangeable clamping head. If replacing the coupling does not produce the desired result, the handpiece motor must be replaced.

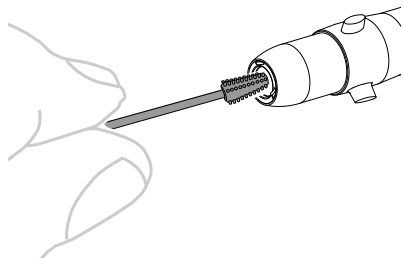
You can carry out the replacement yourself:

1. Remove the handpiece motor with coupling as described in the chapter "6.4 Cleaning the flexible suction hose and motor cable" (page 74).
2. Mount the new handpiece motor on the coupling for the interchangeable clamping head as described in the chapter "6.5 Replacing the coupling for the interchangeable clamping head" (page 78).
3. Reinstall the new handpiece motor with coupling as described in the chapter "6.4 Cleaning the flexible suction hose and motor cable" (page 74).

6.7 Cleaning the bearing bush of the coupling for the interchangeable clamping head

Use the cleaning swab and cleaning fluid supplied to clean the bearing bush of the coupling for the interchangeable clamping head.

Remove the interchangeable clamping head as described on page 73 to access the bearing bush.



6.8 Warranty

The product comes with a 2-year warranty. Normal wear and tear of surfaces, handles, clamping devices and/or moving components such as rollers, bearings, plug connections, suction hoses, and so on, are excluded from this warranty. Traces of use and signs of wear and tear which are based on normal use corresponding to the performance specifications and/or the nature of the product are in accordance with the contract and are not defects from a legal standpoint.

The warranty is valid from the date of purchase when the product was first bought. The date of purchase must be confirmed by the sales receipt. Within the scope of the warranty, HELLMUT RUCK GmbH will, at no charge, either repair or replace the defective products, at RUCK's discretion. This requires carriage-paid shipment of the defective product together with the purchase receipt. The local agent is responsible for claims made outside of Germany. In case of doubt, please check with RUCK before returning the device.

The warranty becomes null and void if we find that the problem was caused by improper or incorrect installation, assembly or usage, by non-observance of the instructions for use, by external intervention or as a result of an unauthorised repair or modification.

The warranty is limited to repair or replacement of the product. Further liability (loss of revenue or earnings in particular) is excluded. However, if it is determined that it is a problem that is not covered by the terms of the warranty or that the period of the guarantee has elapsed, any costs for inspection and repair must be borne by the customer.

We reserve the right to make changes to and deviations from the technical design.

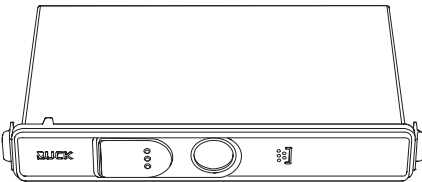
Maintenance and warranty

6.9 Filters and spare parts

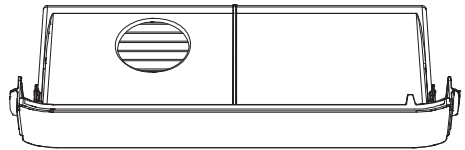
We offer suitable filters and spare parts to maintain or restore the function of the device. Only use original parts from RUCK. The use of other parts may impair the functionality and properties of the device. Among other things, there may be an increased emission of electromagnetic radiation or reduced interference immunity.

6.9.1 Filters

Dust filter bag, 4 pieces,
item no. 5801001

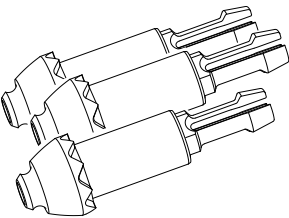


HEPA filter, item no. 5801101



6.9.2 Spare parts

Interchangeable clamping head
nova PRO/SE, 3 pieces, item no. 5801701



Cleaning swab for nova PRO/SE,
item no. 5801801



Pull-off aid incl. bur fit gauge for
nova PRO/SE, item no. 5802201

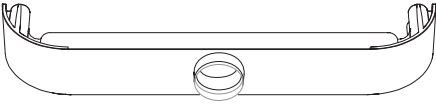


Cable pull-in aid for nova PRO/SE,
item no. 5802401

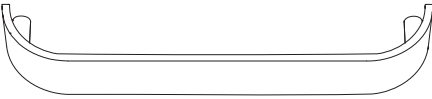


Maintenance and warranty

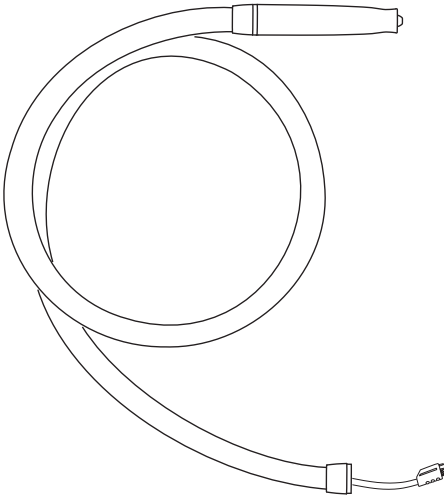
Dust filter bag cover, item no. 4959901



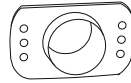
HEPA filter cover, item no. 4959501



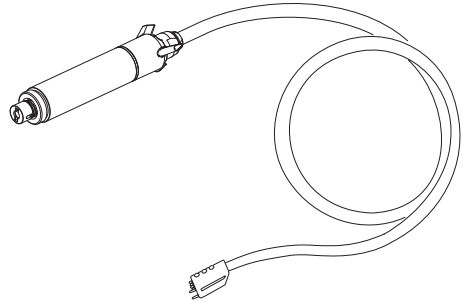
Handpiece unit, complete set,
item no. 4977501



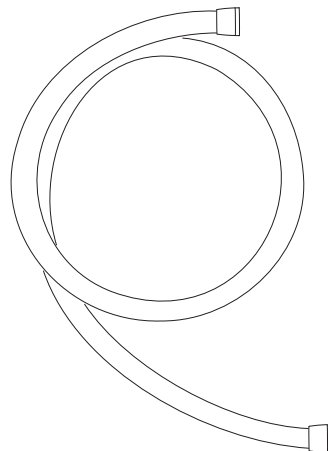
Plug-in tube for dust filter chamber,
item no. 4977401



Handpiece motor incl. cable and plug,
item no. 4960101

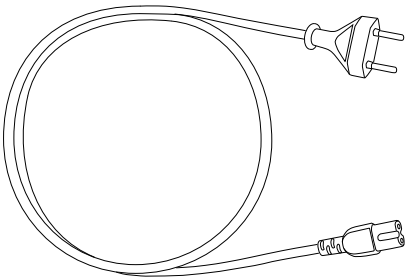


Flex suction hose, 145 cm,
item no. 4959401

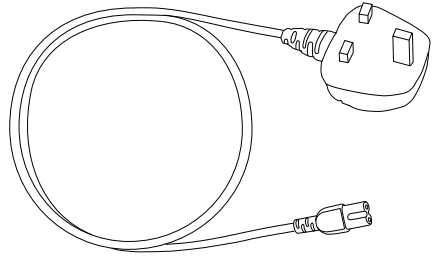


Maintenance and warranty

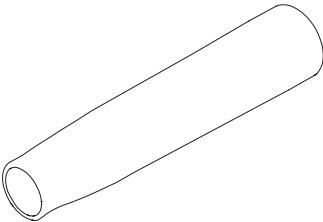
Mains cable, type C plug (Euro plug),
item no. 4960301



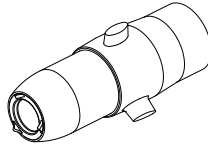
Mains cable, type G plug, (for the
United Kingdom), item no. 4960401



Handpiece sleeve for nova PRO,
item no. 4960501

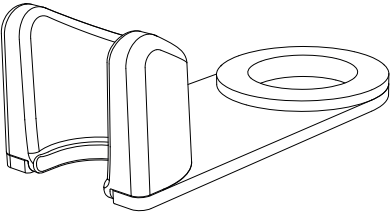


Coupling for interchangeable clamping
head, item no. 4959301

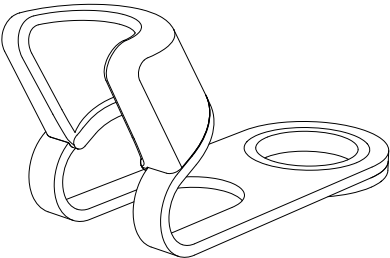


7 Accessories

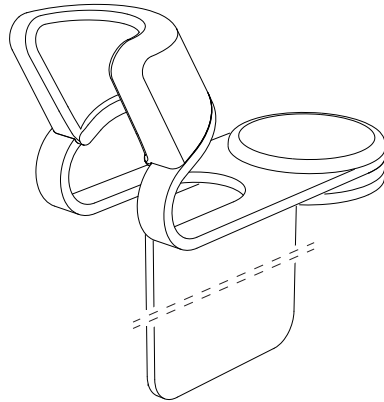
Handpiece holder for mobile system for nova PRO/SE, item no. 5802501



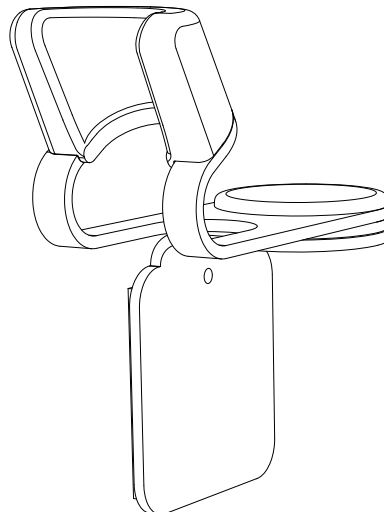
Handpiece holder for ROOM classic for nova PRO/SE, item no. 5802502



Handpiece holder for ROOM move for nova PRO/SE, item no. 5802503

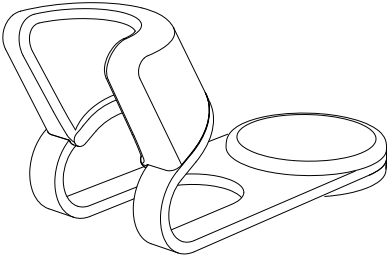


Handpiece holder for wall for third-party cabinet for nova PRO/SE, item no. 5802504

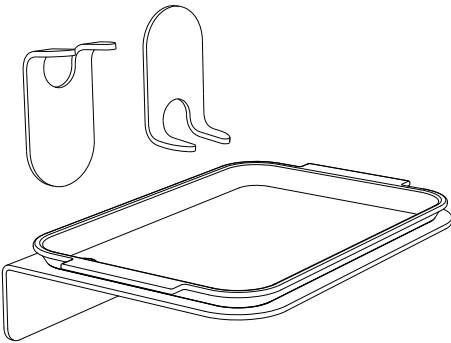


Accessories

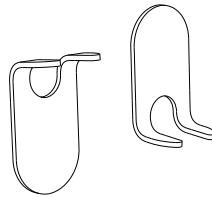
Handpiece holder free-standing for nova PRO/SE, item no. 5802505



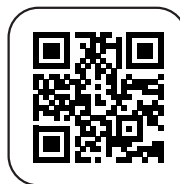
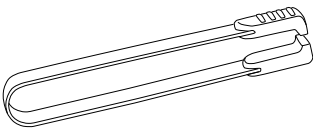
Accessory set for hose cleaning, item no. 5801901



Holder for hose cleaning for nova PRO/SE, 2 pcs, item no. 5802301

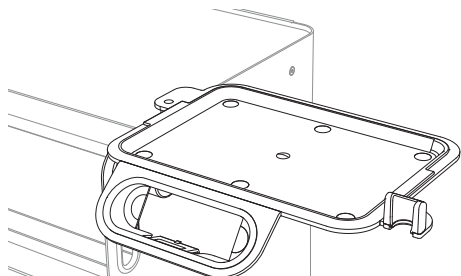


Cutter pliers, chrome plated, item no. 2126401)

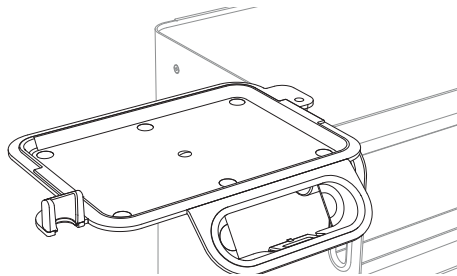


Click on the link or scan the QR code to see an instructional video.
qr.de/Fraeserzange

Instrument tray for nova PRO for
right-handers, item no. 5802601



Instrument tray for nova PRO for
left-handers, item no. 5802602



Disposal

8 Disposal

8.1 Expected useful life

The expected useful life of the device and accessories is 7 years.

8.2 Disposal of filters

Please dispose of full filters with household waste.

8.3 Disposal of the device after the useful life

In the EU, old devices must be disposed of as electronic waste and do not belong in household waste. Dispose of the device at the end of its service life through suitable return and collection systems.



Protect our environment by disposing of waste responsibly.

Observe the regulations and laws that apply in your state, country and region.

9 Messages




The device supports you in planning filter changes and maintenance and gives you tips on how to solve minor problems yourself.

The device issues messages for this purpose. Depending on the type of message, the messages appear in given situations or only when restarting. If at least 1 message is pending, the message symbol has a small red circle. The number in the circle stands for the number of pending messages.







As long as messages are shown on the display, the handpiece motor is switched off. The automatic switch-off of the motor is for your safety.

9.1 Overview of messages





<p> The cover of the dust filter bag is open.</p>	<p>Message no.</p>
<p>The message appears if the cover of the dust filter bag has been opened intentionally or unintentionally. Opening is necessary, for example, when the dust filter bag needs to be changed or the suction hose needs to be cleaned. Close the cover as soon as you have completed the work. You can only continue working when the cover is closed.</p>	<p>22004</p>
<p> No dust filter bag in the device.</p>	<p>Message no.</p>
<p>The message appears if there is no dust filter bag in the device. Insert a new dust filter bag, see page 62. You can only continue working once a dust filter bag filter has been inserted.</p>	<p>22002</p>
<p> No HEPA filter in the device.</p>	<p>Message no.</p>
<p>The message appears if there is no HEPA filter in the device. Insert a new HEPA filter, see page 65. You can only continue working once a HEPA filter has been inserted.</p>	<p>22003</p>

Messages

 Hose cleaning due.	Message no.
<p>The message appears as a reminder to clean the inside of the flexible suction hose. You can set the timer to a value between 5 and 35 operating hours. You can also switch off the reminder completely, see page 46.</p> <p>Tap on the OK button to close the message.</p> <p>Disassemble and clean the hose. Description of the removal of the suction hose: Page 74.</p>	40005
 Filling level of the dust filter bag: 60 %.	Message no.
<p>The message appears if the filling level of the dust filter bag is between 60 % and 79 % and one of the following conditions exists:</p> <ul style="list-style-type: none">› The inactivity of the display was ended after 10 hours or more.› The device has been switched on again. <p>The message is purely informative. You can continue working without any restrictions.</p> <p>The next message appears when the dust filter bag is 80 % full.</p>	40000
 Filling level of the dust filter bag: 80 %.	Message no.
<p>The message appears if the filling level of the dust filter bag is between 80 % and 99 % and one of the following conditions exists:</p> <ul style="list-style-type: none">› The inactivity of the display was ended after 10 hours or more.› The device has been switched on again. <p>The suction power of the device is reduced and decreases further with increasing filling level.</p> <p>Replace the dust filter bag as soon as possible.</p>	50000
 The dust filter bag is full.	Message no.
<p>The message appears if the dust filter bag is full.</p> <p>Remove the dust filter bag and insert a new dust filter bag, see page 62.</p>	50001

<p>! Filter change: dust filter bag.</p>	<p>Message no.</p>
<p>The message appears if the cover of the dust filter bag is closed again after it has been opened.</p> <p>Answer the question after you have changed the filter.</p>	<p>50005</p>
<p>i HEPA filter: change note 1</p>	<p>Message no.</p>
<p>The message appears if between 370 and 389 operating hours have passed since the HEPA filter was last replaced and one of the following conditions exists:</p> <ul style="list-style-type: none"> › The inactivity of the display was ended after 10 hours or more. › The device has been switched on again. <p>The message is purely informative. You can continue working without any restrictions.</p> <p>The next message appears after 390 operating hours of the HEPA filter. The HEPA filter must be replaced at the latest when it has reached 400 operating hours.</p>	<p>40002</p>
<p>! HEPA filter: change note 2</p>	<p>Message no.</p>
<p>The message appears if between 390 and 399 operating hours have passed since the HEPA filter was last replaced and one of the following conditions exists:</p> <ul style="list-style-type: none"> › The inactivity of the display was ended after 10 hours or more. › The device has been switched on again. <p>The HEPA filter is almost full. The suction power of the device is reduced and decreases further with increasing operating time.</p> <p>Replace the HEPA filter as soon as possible. The HEPA filter must be replaced at the latest when it has reached 400 operating hours.</p>	<p>50003</p>

Messages

 The HEPA filter is full.	Message no.
<p>The message appears when the HEPA filter is full. The HEPA filter has reached 400 operating hours. Remove the HEPA filter and insert a new HEPA filter, see page 65.</p>	50004
 Filter change: HEPA filter.	Message no.
<p>The message appears if a HEPA filter is reinserted in the slot after the HEPA filter has been removed. Answer the question after you have changed the filter.</p>	50006
 Next maintenance due shortly.	Message no.
<p>The message appears if maintenance is due in 40 operating hours or less. Regular maintenance should be carried out after 1200 operating hours. The message is purely informative. You can continue working without any restrictions.</p>	40001
 Maintenance overdue.	Message no.
<p>The message appears if 1200 operating hours or more have passed since the last maintenance and one of the following conditions is present:</p> <ul style="list-style-type: none">› The inactivity of the display was ended after 10 hours or more.› The device has been switched on again. <p>The message is purely informative. You can continue working without any restrictions. During maintenance by RUCK service department, the operating hours are reset and the message is cancelled.</p>	50002

<p>! Cleaning: Flexible suction hose</p>	<p>Message no.</p>
<p>The message appears if, after opening the cover of the dust filter bag, the cover has been closed again and the time for the hose cleaning reminder has expired. Answer the question after cleaning has been carried out.</p> <p>The reminder function can be set between 5 and 35 operating hours or switched off completely, see page 46.</p>	<p>40050</p>
<p>! Overloading of the handpiece motor</p>	<p>Message no.</p>
<p>The message appears if a foreign part in the handpiece overloads the handpiece motor. This can be a disposable glove or a piece of it, for example.</p> <p>Unscrew the sleeve of the handpiece and remove the blocking foreign part.</p> <p>Once you have rectified the problem and confirmed the message, you can continue working.</p>	<p>22301</p>
<p>! Increased temperature of the suction turbine</p>	<p>Message no.</p>
<p>The message appears if the suction turbine is warmer than intended.</p> <p>Make sure that the air outlet on the rear of the device is not covered.</p> <p>Replace the dust filter bag when the filling level is 80 % or more.</p>	<p>22402</p>
<p>⚠ The suction turbine has overheated: ## °C</p>	<p>Message no.</p>
<p>The message appears when the suction turbine has become too hot. Wait until the suction turbine has cooled down to 52 °C.</p> <p>If the error occurs again: Contact the RUCK service department.</p>	<p>32404</p>

Messages

⚠ The main board has overheated.	Message no.
The message appears when the main board has become too hot. In this case, switch off the device and wait 3 minutes before switching it on again. If the error occurs again: Contact the RUCK service department.	31006
⚠ The handpiece motor has overheated.	Message no.
The message appears when the handpiece motor has become too hot. In this case, switch off the device and wait 3 minutes before switching it on again. If the error occurs again: Contact the RUCK service department.	32306
⚠ The display unit has overheated.	Message no.
The message appears when the display unit has become too hot. In this case, switch off the device and wait 3 minutes before switching it on again. If the error occurs again: Contact the RUCK service department.	60100
⚠ Device error.	Message no.
The message appears if a problem has occurred that can only be rectified by the RUCK service department. Contact the RUCK service department.	7083
i No connection to the cloud.	Message no.
The message may appear on a device that is equipped with nova connect . The message indicates that you have changed a setting on the device that could not be saved in the cloud. The message remains until a connection to the cloud is re-established. As soon as the connection is re-established, the settings are synchronised and the message disappears.	76001

10 Technical data

10.1 General data

Feature	Value and unit
Dimensions of the main unit with display unit (width x depth x height)	251 x 269 x 122 mm (9.88 x 10.59 x 4.80 in)
Length of the handpiece	132 mm (5.2 in)
Diameter of the handpiece	26 mm (1.02 in)
Shank diameter of suitable instruments	2.35 mm (2.334 mm to 2.350 mm)
Weight of the main unit	2750 g (6 lbs)
Weight of the handpiece	103 g (0.23 lbs)
Length of the suction hose	145 cm (57 in)
Length of the mains cable	80 cm (31.5 in)
Length of the USB cable between the main unit and display unit	20 cm (7.87 in)
Power supply of the device	100 - 240 V AC 50 - 60 Hz 2.3 - 1.0 A
Maximum power consumption	230 W
Power supply for the handpiece motor	24 V
Idling speed	40,000 rpm
Maximum suction capacity	350 l/min
Protection class	IP 21
Sound level	< 70 dB(A)

10.2 Manufacturer's declaration – Electromagnetic emissions

Emission measurements	Conformance
HF emissions according to CISPR (Comité International Spécial des Perturbations Radioélectriques) [Special International Committee on Radio Interference] 11	Group 1
HF emissions according to CISPR (Comité International Spécial des Perturbations Radioélectriques) [Special International Committee on Radio Interference] 11	Class B
Harmonic components according to IEC 61000-3-2	Class A
Voltage fluctuations / flicker according to IEC 61000-3-3	Fulfilled

Technical specifications

10.3 Electromagnetic interference emission and immunity

The following tables show compliance with the respective standards for interference emission and interference immunity. There are no deviations from this.

Phenomenon	Test level for interference immunity	
	Professional healthcare facility	Environment in the area of home health care
Electro static discharge (ESD) according to IEC 61000-4-2	Contact discharge: ± 8 kV Air discharge: ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV	
High-frequency electric fields according to IEC 61000-4-3	3 V/m 80 MHz to 2.7 GHz 80 % AM at 1 kHz	10 V/m 80 MHz to 2.7 GHz 80 % AM at 1 kHz
Rapid transient electrical disturbance variables / Bursts in accordance with IEC 61000-4-4	± 2 kV 100 kHz repetition frequency	
Surge voltages according to IEC 61000-4-5	± 1 kV ± 2 kV	
Interference immunity to line-conducted disturbance variables, induced by high-frequency fields in accordance with IEC 61000-4-6	3 V 0.15 MHz to 80 MHz 6 V in ISM bands between 0.15 MHz and 80 MHz 80 % AM at 1 kHz	3 V 0.15 MHz to 80 MHz 6 V in ISM bands and amateur radio frequency bands between 0.15 MHz and 80 MHz 80 % AM at 1 kHz
Power frequency magnetic fields in accordance with IEC 61000-4-8	30 A/m, 50 Hz or 60 Hz	
Voltage dips in accordance with IEC 61000-4-11	0 % U_T for 0.5 periods at 8 phase angles (0°, 45°, 90°, 135°, 180°, 225°, 270°, 315°) 0 % U_T for 1 period at 0° 70 % U_T for 25 periods (50 Hz) or 30 periods (60 Hz) at 0°	
Voltage interruptions in accordance with IEC 61000-4-11	0 % U_T for 250 periods (50 Hz) or 300 periods (60 Hz) at 0°	
Magnetic fields in accordance with IEC 61000-4-39	134.2 kHz ; 65 A/m; PM: 2.1 kHz 13.56 MHz ; 7.5 A/m; PM: 50 kHz	30 kHz ; 8 A/m; CW

U_T = mains AC voltage before implementation of the test level.

PM = Pulse modulation

CW = Continuous wave

Interference immunity test of sheaths against high-frequency wireless communication devices

Test frequency (MHz)	Frequency band ^a (MHz)	Radio service ^a	Modulation	Test level (V/m)
385	380 to 390	TETRA 400	Pulse modulation ^b , 18 Hz	27
450	430 to 470	GMRS 460, FRS 460	Frequency modulation ^c , ± 5 kHz deviation, 1 kHz sine	28
710	704 to 787	LTE band 13, 17	Pulse modulation ^b , 217 Hz	9
745				
780				
810	800 to 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE-Band 5	Pulse modulation ^b , 18 Hz	28
870				
930				
1720	1700 to 1990	GSM 1800, CDMA 1900, GSM 1900, DECT, LTE band 1, 3, 4, 25, UMTS	Pulse modulation ^b , 217 Hz	28
1845				
1970				
2450	2400 to 2570	Bluetooth [®] , WLAN 802.11 b/g/n, RFID 2450, LTE band 7	Pulse modulation ^b , 217 Hz	28
5240	5100 to 5800	WLAN 802.11 a/n	Pulse modulation ^b , 217 Hz	9
5500				
5785				

If necessary, the distance between the transmitting antenna and the medical electrical equipment may be reduced to 1 metre to achieve the test level. A test distance of 1 metre is permitted in accordance with IEC 61000-4-3.

- a For some radio services, only the frequencies for the radio link from the mobile communication device to the base station (en: uplink) have been included in the table.
- b The carrier must be modulated with a square wave signal with a duty cycle of 50 %.
- c As an alternative to frequency modulation, the carrier can be modulated with a square wave signal with a duty cycle of 50 % at 18 Hz. Although it does not represent the actual modulation, it would be the most unfavourable case.

Technical specifications

10.4 Radio technologies used

The device uses the following radio technologies:

Technology	Frequency band	Modulation	Radiated power
WLAN 802.11 ac/a/b/g/n	2.412 - 2.462 GHz 5.18 - 5.825 GHz	CCK, DQPSK, DBPSK, 64QAM, 16QAM, QPSK, BPSK, 256QAM	<885.515 mW
BT 5.0 LE	2.402 - 2.480 GHz	GFSK	2.748 mW
IoT GSM; LTE Cat NB1 - NB-IoT	0.663 - 2.200 GHz	GMSK, 8PSK, QPSK, 16QAM	<158.4893 mW

As with all wireless communication technologies, certain operating conditions can interrupt communication. For example, electrical appliances such as microwave ovens and electrical machines can cause interference in production environments. These faults do not result in incorrect data being sent and do not damage the devices. If you remove these other devices or switch them off, communication can be re-established.

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