ACCUVAC Rescue

Suction pump

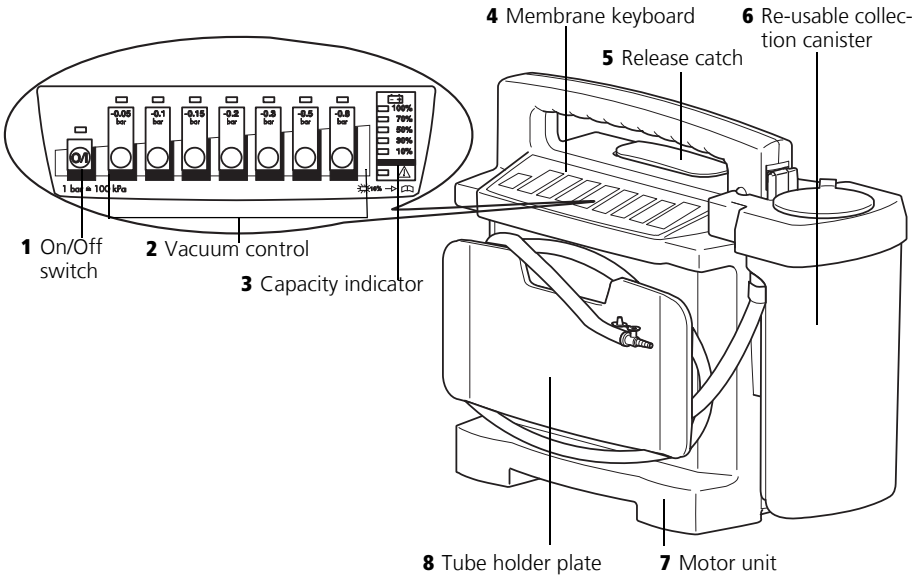
Description and Operating Instructions

WEINMANN
medical technology

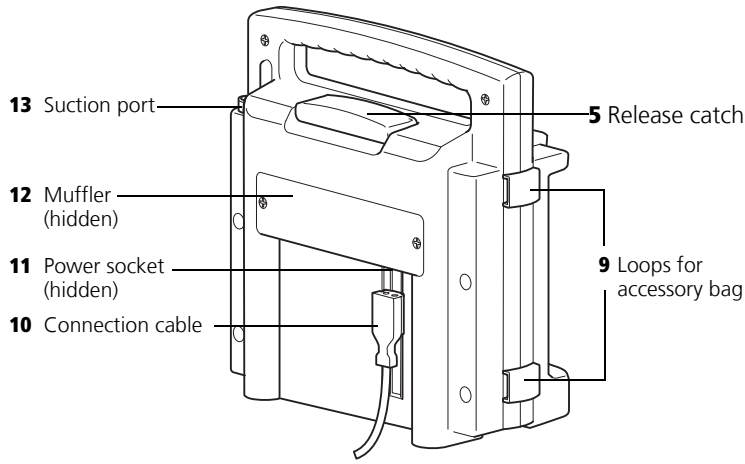
Contents

1. Overview

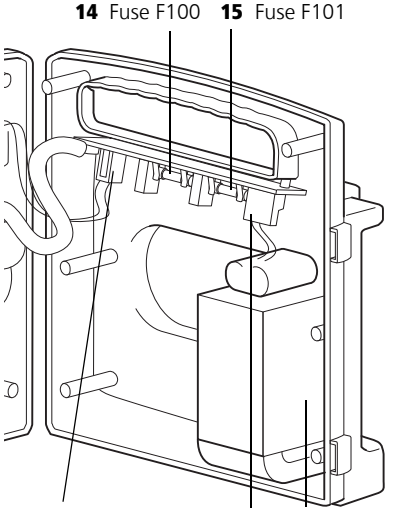
ACCUVAC Rescue from front with reusable collection canister



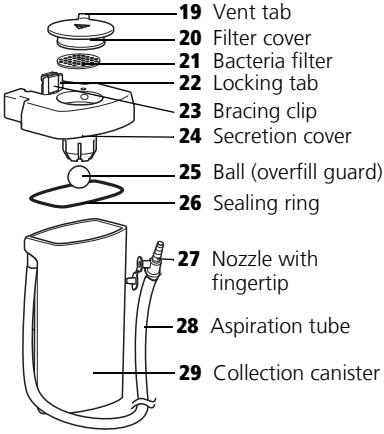
ACCUVAC Rescue from rear without collection canister



ACCUVAC Rescue interior

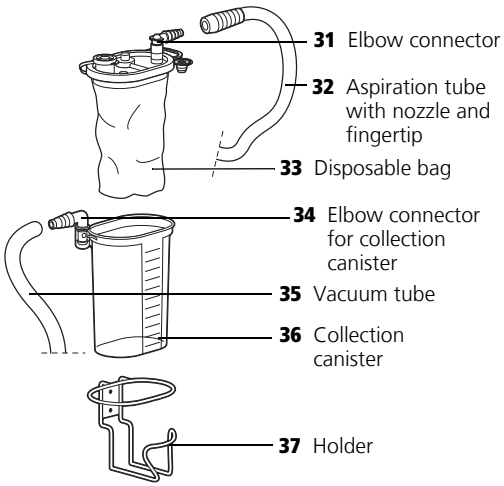


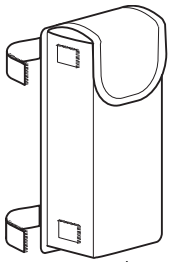
Re-usable collection canister



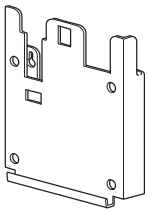
Accessories and replacement parts

30 Set, disposable collection canister





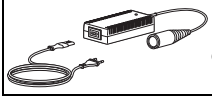
Accessory bag
WM 10655



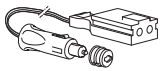
Wall bracket
WM 15208

Holder WM 10728

Power supply (partly included in scope of supply, see section 10.)

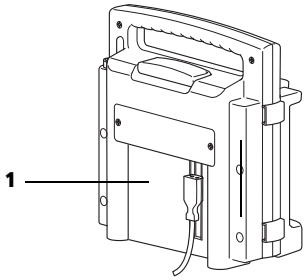


Mains / charger unit FW7405M/14, complete WM 2610



Connection cable WM 10650

1.1 Symbols on the rating plate



	Symbol	Meaning
1	**SN**	Serial number of device
		Year of manufacture
		Direct voltage
	CE 0197	CE symbol (confirms that the product conforms to the applicable European directives)
		Degree of protection against electric shock: appliance type BF
	IPX1	Protection against ingress of water
		Do not dispose of device in domestic waste

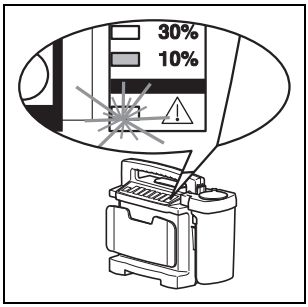
1.2 Symbols on the packaging

Symbol	Meaning
SN	Serial number of device
+70 °C -40 °C	Permitted temperature for storage: -40 °C to +70 °C
CE 0197	CE symbol (confirms that the product conforms to the applicable European directives)

1.3 Special symbols on the appliance

Re-usable collection canister

The symbol on the filter cover draws attention to the built-in bacteria filter. This must be changed or sterilized after use to prevent the risk of infection (see "6. Hygienic preparation" on page 29).



Capacity indicator

The warning symbol in the capacity indicator draws attention to the risk of complete discharging, which could damage the power pack.

If the 10% LED lights up, it is time to recharge the ACCUVAC Rescue immediately (see "5.4 Charging the ACCUVAC Rescue" on page 26).

If the 10% LED flashes, you must recalibrate the capacity indicator (see " Calibrating the capacity indicator" on page 43).

2. Description

2.1 Intended use

ACCUVAC Rescue is a mobile, portable, electrically operated medical aspirator for temporary use with adults, children and infants:

- aspirating accumulations of blood, secretions and food from the oral cavity, the nose and throat region and the bronchial system;
- deflating vacuum matresses and inflatable splints.

In expert hands, the ACCUVAC Rescue can eliminate obstructions in the airways and so prevent the risk of respiratory failure. It can be used in buildings, in the open air and during transport.

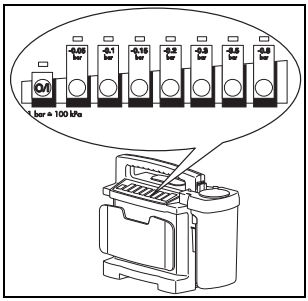
ACCUVAC Rescue must **not** be used:

- in medical rooms where potential equalization is necessary (e.g. heart surgery);
- in explosion-risk areas.
- for drainage in low-vacuum conditions (e.g. drainage of wounds or the thorax).

2.2 Function

An electrically powered diaphragm pump generates the vacuum necessary for aspiration.

The appliance can optionally be powered by a rechargeable internal power pack or can also be supplied by an external direct voltage source with 12.0 - 13.8 V.

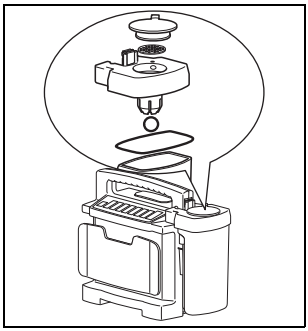


Use the vacuum control to select the desired vacuum between –0.05 bar and –0.8 bar. The membrane keyboard is illuminated so that you can see the operating status even after dark.

Note

- Once the preselected vacuum is reached, the pump switches to standby. If the vacuum changes, the pump starts up again to restore the vacuum to the preselected level.
- ACCUVAC Rescue reduces energy consumption by reducing power when the vacuum has been reached.

The aspirated material passes through the aspiration tube into the collection canister.



Re-usable collection canister

The re-usable collection canister is fixed to the side of the motor unit and directly connected to the suction port of the motor unit.

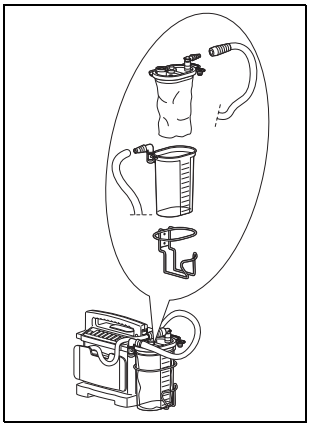
A replaceable hydrophobic bacteria filter in the secretion cover prevents bacteria and droplets of moisture from finding their way into the motor unit and passing into the environment via the muffler.

The bacteria filter is designed for multiple re-use and sterilisation.

Important Do not immerse the bacteria filter in disinfectant liquid, as this adversely affects its hydrophobic properties.

An overfill system prevents secretions from entering the motor unit. The ball floats on the surface of the secretion until it blocks the exit.

Disposable collection canister



The disposable collection canister consists of the collection canister itself, the disposable collection bag, the aspiration tube with fingertip, the intermediate tube and the vacuum tube.

The disposable collection canister is inserted in the holder screwed on the side of the motor unit.

The vacuum tube of the disposable canister is pushed onto the suction port of the motor unit.

The aspirated material passes through the aspiration tube into the disposable collection bag. The disposable collection bag and the aspiration tube are disposables.

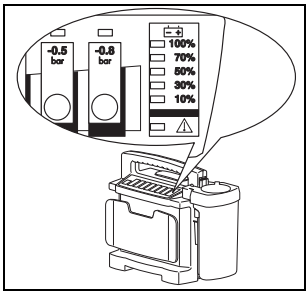
When the disposable collection bag is full, you can remove it from the collection canister and dispose of it complete with contents.

An overflow valve filter is integrated in the disposable collection bag. This prevents secretions and liquid from finding their way into the motor unit and passing into the environment via the muffler.

Power supply

Power can be drawn:

- from the built-in power pack.
- from the WM 10650 connection cable using an available 12 Volt vehicle power supply.
- from the FW7405M/14 mains/charger unit, complete WM 2610.



The capacity indicator shows the charge status of the power pack in percent.

Charging of the power pack starts automatically as soon as the appliance is switched off and connected to an external power supply (see "11. Technical Data" on page 51).

3. Safety instructions

For your own safety and the safety of your patients and in accordance with the requirements of Directive 93/42/EEC, please note the following:

- Use the ACCUVAC Rescue for the described purpose only (see "2.1 Intended use" on page 7).
- Please read these instructions for use through carefully. They are a constituent part of the device and must be available at all times.
- Before starting to work with ACCUVAC Rescue, you must understand how to operate it.
- ACCUVAC Rescue should be used only if you are medically qualified and have received training in aspiration techniques. Severe physical damage may be caused by incorrect use.
- Pay particular attention during aspiration to ensure that no injuries are caused to the patient's oropharyngeal cavities, e.g. to the mucous membranes. You can briefly interrupt suction, for example if the skin is aspirated, by opening the fingertip regulator.
- For bronchial aspiration, work under sterile conditions and use only sterile aspirating catheters.
- If you use disposable collection canisters, ensure that tubes are connected correctly in accordance with the manufacturer's instructions.
- When working with the re-usable collection canister, the appliance must be upright because otherwise the ball in the overflow cutout cannot reliably block the connection to the aspirator and secretion may enter the aspirator. This may damage the appliance.

- When working with the disposable collection canister, the appliance must be upright. This prevents the overflow valve filter integrated in the disposable collection bag from being wetted with fluid. If this occurs, the overflow valve filter becomes impermeable for air and you must replace the disposable collection bag. Use only clean canisters, otherwise secretion may get into the device.
- We recommend that you keep an alternative aspiration appliance on standby in case of an appliance failure.
- Follow the section entitled "6. Hygienic preparation" on page 29 to prevent an infection or bacterial contamination.
- Dispose of fluids such as blood and secretions, as well as parts contaminated with these fluids, as per the guidelines in the Federal Health Gazette entitled "Anforderungen der Hygiene an die Abfallentsorgung" [Hygiene requirements when disposing of waste] (published by the Federal Office of Health and obtainable from Carl Heymanns Verlag, Cologne).
- If third-party items are used, functional failures and restricted fitness for use may result. Biocompatibility requirements may also not be met. In such cases, please be aware that any claim under warranty and liability will be voided if neither the accessories nor the genuine replacement parts recommended in the instructions for use are used.
- Have servicing and repair work performed only by the manufacturer, WEINMANN Emergency, or by professional staff.
- To increase the service life of the power pack it should not be fully discharged. Please recharge

the power pack at the latest when the red 10% LED on the capacity indicator lights up.

- To counter the risk of a complete discharge, you must ACCUVAC Rescue never store the power pack when it is discharged. Charge the battery beforehand according to (see "5.4 Charging the ACCUVAC Rescue" on page 26).
- Power packs also lose their charge when not used. Self-discharge increases as the temperature rises and is approx. 50 % at 20 °C when not used for 1.5 months. You should therefore make sure you comply with the intervals given for the functional check (see "7. Functional check" on page 36).
- Do not immerse the bacteria filter in disinfectant liquid as this adversely affects its hydrophobic properties.
- You must not sterilize the motor unit in an autoclave.
- You must not immerse the motor unit in a disinfectant solution.
- Do not use any cellphones in the immediate vicinity of ACCUVAC Rescue. It is possible to operate the ACCUVAC Rescue without any problems in the patient area of an ambulance, even if a cellphone is in use in the cab.

4. Assembly

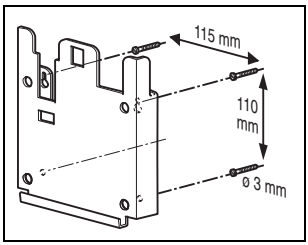
The ACCUVAC Rescue is supplied ready for use.

Important Before using the ACCUVAC Rescue for the first time, fully charge the power pack (see "5.4 Charging the ACCUVAC Rescue" on page 26).

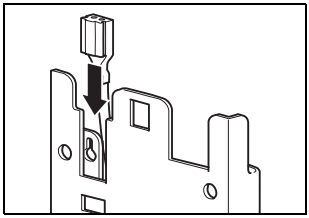
4.1 Assembly with wall bracket

If the WM 15208 wall bracket is not included in the scope of supply of your appliance, you may order the wall bracket as a accessory.

Note Please use the sheet-metal screws enclosed with the wall bracket for metallic mounting surfaces only, e.g. in vehicles. If you wish to mount the wall bracket on other mounting surfaces, please use screws that are suitable for the relevant surfaces. Such screws are not included in the scope of supply of the wall bracket.

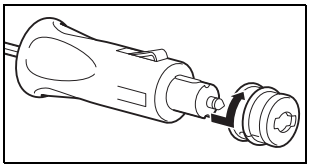


1. Find a suitable mounting location on an **even**, **vertical** surface. The outline of the ACCUVAC on the drilling template shows the space required.
2. Hold up the drilling template and level it with a spirit level.
3. Mark the required screw holes on the mounting location.
4. Drill the screw holes with a Ø 3 mm drill.
5. Screw the wall bracket on firmly with the screws supplied.



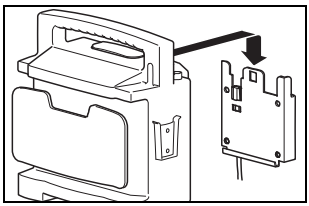
6. Push the appliance plug of the connection cable or of the mains/charger unit into the guide rail of the wall bracket until it engages with the tongue.

   Important: the mounting substrate must be sufficiently strong to hold the wall bracket and the ACCUVAC securely in accordance with EN 1789 Medical Vehicles and their Equipment - Road Ambulances.



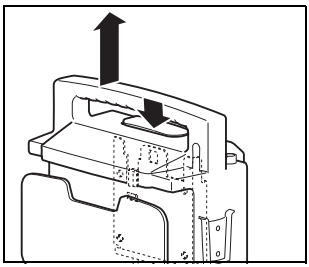
7. Insert the vehicle plug of the connection cable WM 10650 in a 12-volt DC power source or the mains / charger unit in a 230 V/50 Hz power supply socket.

   The vehicle plug is supplied complete with a red adapter ring. This is needed to plug the vehicle plug into a cigarette lighter socket. To connect to the mains / charger unit FW7405M/14, complete WM 2610 or a 12-volt vehicle socket, remove the red adapter ring.



8. Slide the ACCUVAC Rescue downwards into the wall bracket.

   If the ACCUVAC Rescue appliance is switched off, it will automatically be charged up from the DC power source.

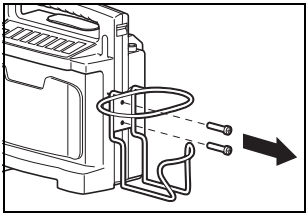


9. To remove the ACCUVAC Rescue from the wall bracket ready for use, press the release catch and lift the ACCUVAC Rescue out of the wall bracket.

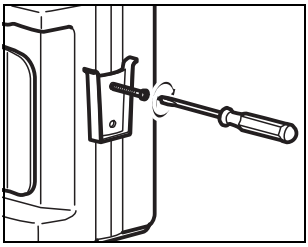
4.2 Fitting a re-usable collection canister

With the conversion kit WM 15261 you can also mount a re-usable collection canister instead of a disposable collection canister.

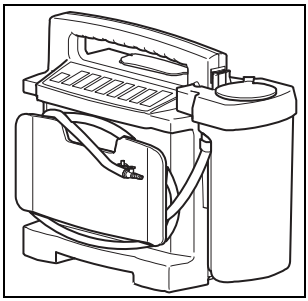
1. Disconnect the vacuum tube from the intake connector of the motor unit.
2. Remove the disposable collection canister from its holder.
3. Unscrew the holder from the motor unit.



4. In the same place, screw on the holder for the re-usable collection canister.



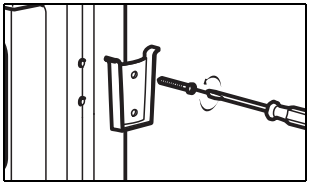
5. Push the re-usable collection canister into the holder.



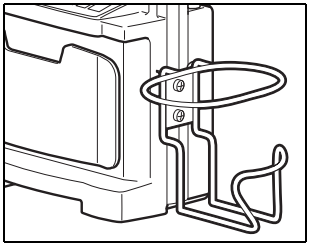
4.3 Fitting a disposable collection canister

The conversion kit WM 15930 can be used to fit a disposable collection canister in place of a re-usable collection canister.

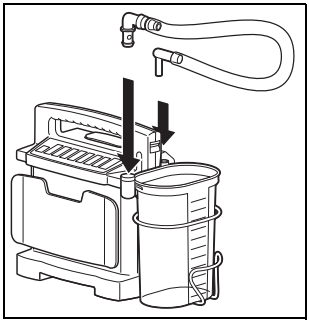
1. Remove the re-usable collection container from the motor unit.



2. Unscrew the holder from the motor unit.

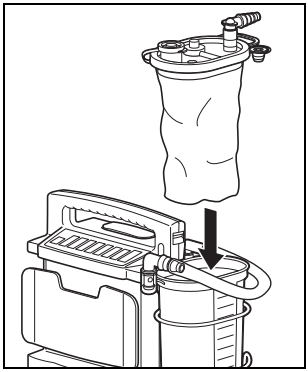


3. In the same place, screw on the holder.
4. Push the collection canister into the holder.

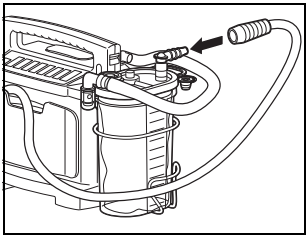


5. Connect the collection canister to the intake connector of the motor unit via the vacuum tube.

4.4 Inserting the disposable collection bag



1. Insert a new disposable collection bag.

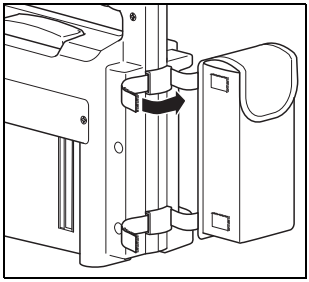


2. Push a new aspiration tube onto the elbow connector of the disposable collection bag.
3. Switch on the device.
4. Set the vacuum of -0.8 bar on the device and connect the patient connection.

The device creates a vacuum in the collection canister and the disposable collection bag unfolds. As soon as the disposable collection bag has completely unfolded inside the collection canister, you can set the desired vacuum and start aspirating (see "5.2 Aspiration" on page 22).

4.5 Fitting an accessory bag

If the accessory bag WM 10655 is not included in the scope of supply of your appliance, you may order the accessory bag as an accessory. It is used to hold aspiration catheters and other small parts. The accessory bag cannot be fitted at the same time as a rinsing glass (see "4.6 Fitting a rinsing glass" on page 19).



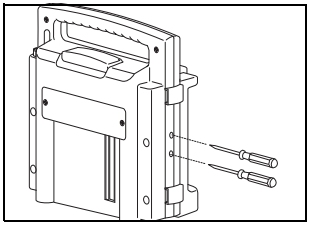
1. Use the velcro-type strips to attach the accessory bag to the loops on the motor unit.

4.6 Fitting a rinsing glass

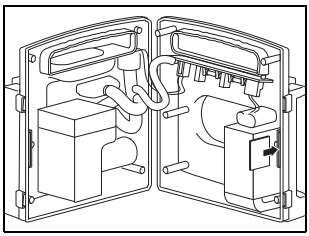
On the left side of the appliance it is possible to fit an additional collection canister in the form of a rinsing glass for holding a rinsing liquid, e.g. water.

The rinsing glass kit WM 15229 consists of:

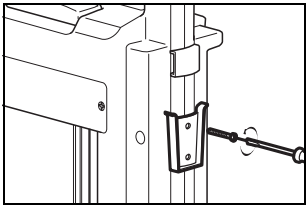
- Collection canister WM 10631
- Holder set WM 15271
- Mounting panel WM 10728



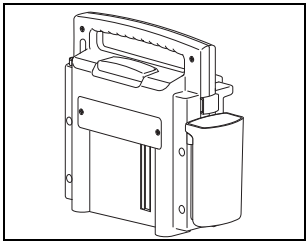
1. Use a pointed object to pierce the two closed drill holes on the left of the appliance case.
2. Open the appliance.



3. Insert the plate from the holder set into the guide.
4. Close the appliance.



5. Fix the holder to the left side of the appliance.



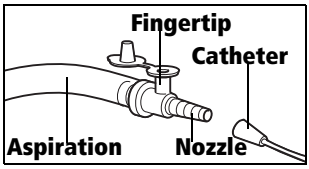
6. Push the rinsing glass into the holder.

5. Operation

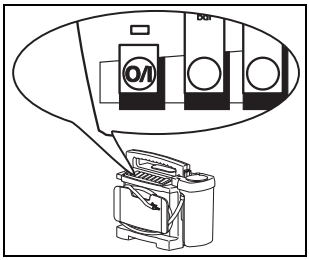
5.1 Preparing for aspiration

Tip: When using the re-usable collection canister you will find it makes cleaning considerably easier if you place approx. 50 to 100 ml disinfectant or even water in the bottom of the canister before starting aspiration. This prevents the aspirated matter from adhering so firmly to the bottom of the canister.

1. Unwind the aspiration tube from the tube holder plate.

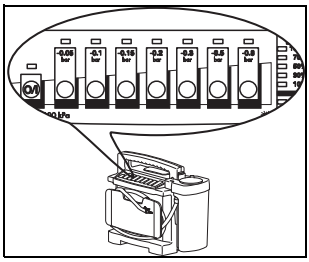


2. If necessary, adapt the end-piece of an aspirating catheter of a suitable size for tracheal, bronchial or nasopharyngeal aspiration.



3. Press the button marke **O/I**.

   After switching on, all LEDs light up for one second. After that, only those LEDs that indicate the operating status stay on.



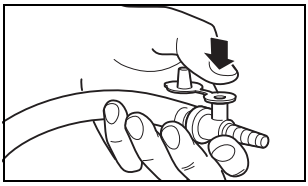
4. Preselect the desired vacuum by pressing the appropriate button.

The ACCUVAC Rescue is now ready for operation, and you can start aspiration.

5.2 Aspiration

- During the aspiration process, take care not to cause any injury to the patient's mouth and throat region, and especially to mucous membrane.
- The appliance can run for 60 minutes in continuous operation (S2 mode). Switch the appliance off after 60 minutes continuous operation to prevent overheating. Allow the appliance to cool off for at least 2 hours.
- If you run the pump at a specified pressure of -0.8 bar and with an open intake connector, the LED will flicker occasionally at -0.05 bar, as the pump has a greater capacity and so already generates a slight vacuum, even with the intake connector open.
- The fingertip can be opened to interrupt suction briefly, e.g. if the nozzle is clinging to the skin.

  You can leave the fingertip open all the time and keep your thumb over it. Then all you have to do to release the suction is lift your thumb.



Important

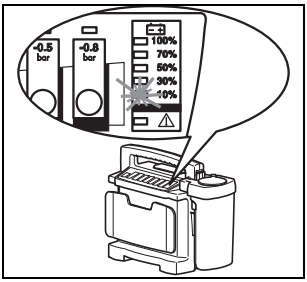
- When working with the re-usable collection canister, the appliance must always be upright because otherwise the ball in the overflow cutout cannot reliably block the connection to the aspirator. This could result in secretion getting into the aspirator and damaging it.
- When working with the disposable collection canister, the appliance must always be upright so that the overflow valve filter integrated in the disposable collection bag is not wetted with secretion. If the overflow valve filter is wetted with

secretion, it becomes impermeable and the disposable collection bag has to be replaced.

Note

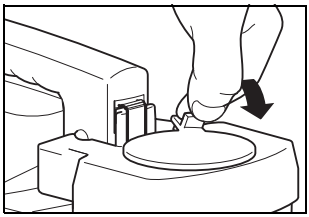
- Keep an eye on the fill level of the collection canister during aspiration with the reusable collection canister. Empty the canister at a filling level of 850 ml so that the the overfill system does not become soiled and require cleaning. If the overfill system is actuated during aspiration before the filling limit is reached, you must briefly interrupt the aspiration process and vent the system (see " Venting the re-usable collection canister" on page 23).
- Keep an eye on how full the disposable collection bag is with secretion during aspiration with the disposable collection canister. Replace it in good time.

Note



Be sure to check the power pack charge level at regular intervals during aspiration. If the 10% LED on the capacity indicator lights up, aspiration should be continued with a second appliance. Using the unit beyond this point can damage the power pack by discharging it completely, with the result that its full capacity will no longer be available.

Venting the re-usable collection canister



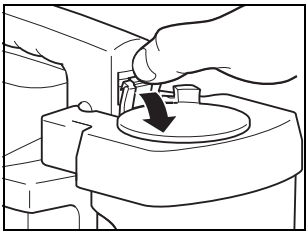
1. Lift the vent tab on the filter cover until the ball of the overfill system falls back again.
2. Insert the tab again. You can now continue with aspiration.

Emptying the re-usable collection canister

If the re-usable collection canister is full to the limit, you must interrupt aspiration and empty the collection canister.

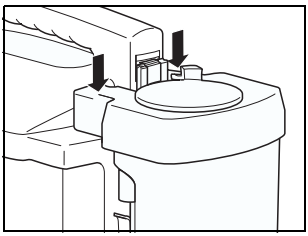
Important When removing the collection canister, take care that the secretion cover is not opened accidentally, allowing the contents to spill over.

1. Unwind the aspiration tube from the tube holder plate to make it easier to remove the canister and reduce the risk of the secretion cover coming open by accident.



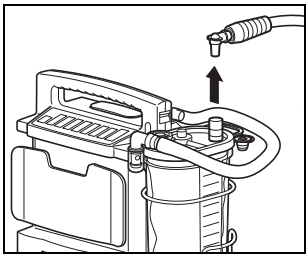
2. Remove the re-usable collection canister from the motor unit by pulling the locking tab out and lifting the canister out of its holder.
3. Carefully remove the secretion cover.
4. Empty the collection canister.

Important Be sure to observe the relevant rules for disposal (see "3. Safety instructions" on page 11).

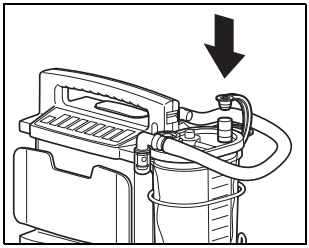


5. Replace the secretion cove on the collection canister.
6. Replace the collection canister in its holder on the motor unit. Please make sure that the secretion cover is forced down onto the motor unit and the locking tab slots into place with the bracing clip.
7. If necessary, reattach the aspiration tube. You can now continue with aspiration.

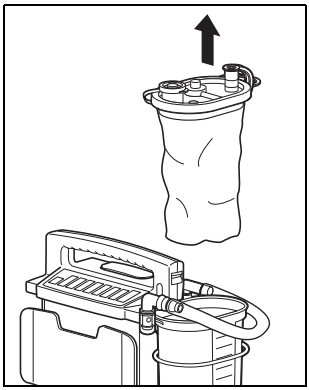
Replacing the disposable collection bag



1. Take the aspiration tube with fingertip and the elbow connector off the disposable collection bag.
2. Dispose of the aspiration tube and elbow connector.



3. Connect the disposable collection bag with the green cap which is attached to the cover. This closes the disposable collection bag and reduces the risk of fluid escaping.



4. Remove the disposable collection bag and dispose of it.

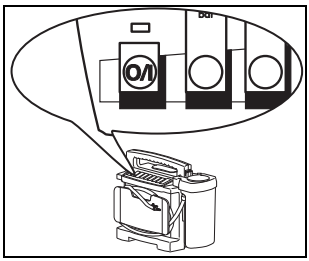
Important

Be sure to observe the relevant rules for disposal (see "3. Safety instructions" on page 11).

5. Insert a new disposable collection bag (see "4.4 Inserting the disposable collection bag" on page 18).

5.3 After aspiration

After aspiration:

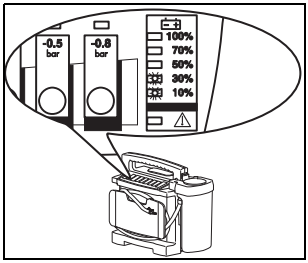


1. Switch off the ACCUVAC Rescue by pressing the button marked **O/I**.

   When running from the power pack, the button remains illuminated for about 4 minutes after switching off, so that it is easy to find for switching the appliance on again when working in the dark.

2. Empty the collection canister (see "Emptying the re-usable collection canister" on page 23) or dispose of the disposable collection bag (see "Replacing the disposable collection bag" on page 24).
3. Clean the ACCUVAC Rescue (see "6. Hygienic preparation" on page 29).

5.4 Charging the ACCUVAC Rescue



We recommend you to charge the ACCUVAC Rescue as soon as the capacity indicator reads 30 %. By doing so you will ensure it operates for an adequate period next time it is used.

The ACCUVAC Rescue has intelligent charge control. It ensures not only optimized rapid charging of the power pack, but also gentle refresher charging for unlimited periods.

The intelligent charge control system prevents overcharging and damage to the power pack.

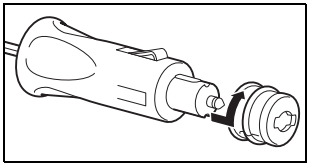
Note If the power pack is too hot or too cold, charging will be interrupted, but the operating light will still be on.

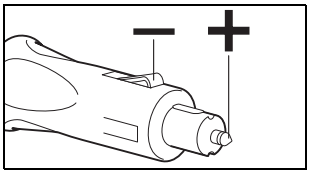
The power supply for charging must deliver 12.0 V – 13.8 V DC and at least 3.2 ampere. A full charge takes about 2 hours.

Note While the device is charging, you may hear slight hissing noises. This is not a malfunction.

The following sources can be used for charging:

- The 12 Volt vehicle power supply using the WM 10650 connection cable;
- The FW7405M/14 mains/charger unit, complete WM 2610.





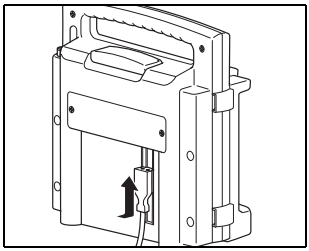
A red adapter ring is fitted to the vehicle connector. This is needed if you want to insert the vehicle connector in a cigarette lighter socket. To connect to the mains/charger unit or a 12 V vehicle socket you must remove the red adapter ring.

Caution: Check the vehicle plug for correct polarity. Reversed polarity can damage ACCUVAC Rescue.

Note

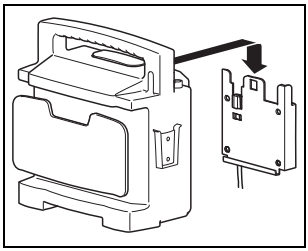
Once the device has been disconnected from the power source, the charging display may remain illuminated for approx. 5 s for technical reasons. You can only start up the device once the charging display has gone out.

Charging without wall bracket



1. Switch off the ACCUVAC Rescue.
2. Place the plug at the appliance end of the connection cable in the guide slot at the rear of the appliance and push it up behind the cover plate.
3. Switch on the power supply.
4. Charging starts automatically a few seconds after you have switched on the power supply. This is indicated by moving lights on the LED capacity display, and is finished as soon as the moving lights stop and the 100 % LED lights up.
5. Disconnect the connecting cable once the device has charged.

Charging with wall bracket



1. Switch off the ACCUVAC Rescue.
2. Insert the ACCUVAC Rescue in the wall bracket.
3. Charging starts automatically a few seconds after you have switched on the power supply. This is indicated by moving lights on the LED capacity display, and is finished as soon as the moving lights stop and the 100 % LED lights up.

6. Hygienic preparation

This product contains disposable items. Disposable items are intended to be used only once. So use these items only once and do **not** reprocess them. Reprocessing disposable items may impair the functionality and safety of the product and lead to unforeseeable reactions as a result of ageing, embrittlement, wear, thermal load, the effects of chemical processes, etc.

Hygienic preparation of ACCUVAC Rescue and the accessories used must be carried out daily during use and before every change of patient. Observe the instructions for the disinfectant used. We recommend gigasept® FF (new) for immersion disinfection and terralin® protect for wipe disinfection.

Never immerse the ACCUVAC Rescue motor unit in disinfectant or other liquids. Always disinfect simply by wiping with disinfectant. Otherwise you may damage the device and thereby endanger users and patients (see "6.2 Cleaning, disinfecting and sterilizing" on page 32).

Be sure to carry out a functional check after every hygienic preparation (see "7.2 Performing the leak check" on page 37).

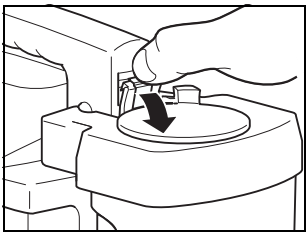
For further information on hygienic preparation and a list of all cleaning agents and disinfectants which can be used, please see our Internet brochure at www.weinmann-emergency.de.

6.1 Preparations

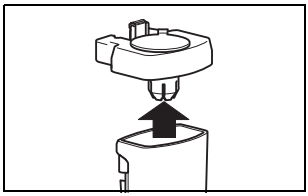
Re-usable collection canister

Important When removing and emptying the re-usable collection canister, take care that the secretion cover does not accidentally come off the collection canister and allow the contents to spill over.

1. Unwind the aspiration tube from the tube holder plate to make it easier to remove the canister and to reduce the risk of the secretion cover coming open by accident.



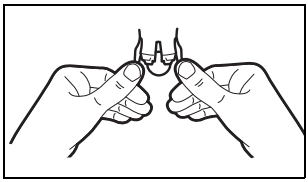
2. Remove the canister from the motor unit by pulling out the locking tab and lifting the canister out of its holder.



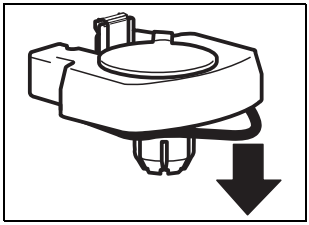
3. Remove the secretion cover.

4. Empty the collection canister.

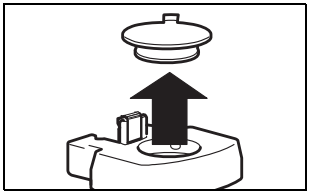
Important Be sure to observe the relevant rules for disposal (see "3. Safety instructions" on page 11).



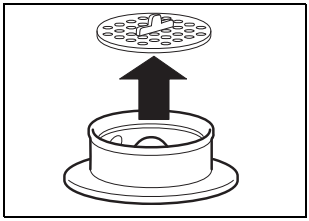
5. Remove the ball from the overfill system. Pull the tabs apart slightly to allow the ball to fall out.



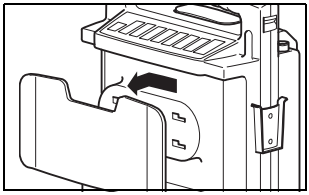
6. Remove sealing ring from groove in secretion cover.



7. Remove the filter cover.

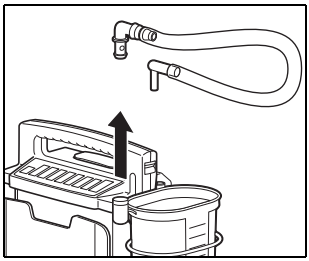


8. Remove the filter.

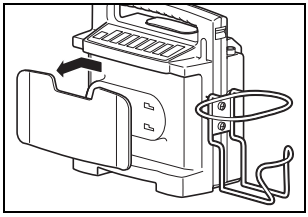


9. Remove the tube holder plate by sliding it to the left to disengage it and then pulling it towards you.

Disposable collection canister



1. Remove the disposable collection bag (see "Replacing the disposable collection bag" on page 24).
2. Remove the vacuum tube.
3. Lift the disposable canister from its holder.



4. Remove the tube holder plate by pushing it to the left until it disengages and then pulling it towards you.

6.2 Cleaning, disinfecting and sterilizing

Hygienic preparation of the ACCUVAC Rescue and the accessories used should be performed as described in the following table.

Observe the instructions regarding use of disinfectant. For immersion disinfection we recommend gigasept® FF (new) and terralin® protect for wipe disinfection. You are recommended to wear suitable gloves (e.g. household or disposable gloves) during disinfection procedures.

<table>
<tr><th colspan="2">Part</th><th>Cleaning</th><th>Disinfecting</th><th>Rinse in washing machine</th><th>Sterilization</th></tr>
<tr><td rowspan="8">Re-usable collection canister</td><td>Collection canister</td><td rowspan="6">In warm water with a mild detergent</td><td rowspan="6">Immerse in dilute solution (3)</td><td rowspan="6">Rinse at up to 95 °C</td><td rowspan="6">Steam sterilization up to 134 °C (4)</td></tr>
<tr><td>Secretion cover</td></tr>
<tr><td>Sealing ring</td></tr>
<tr><td>Overfill ball</td></tr>
<tr><td>Filter cover</td></tr>
<tr><td>Aspiration tube</td></tr>
<tr><td>Filter (1)</td><td>In clear warm water (2)</td><td colspan="2">Not permitted (2)</td><td>Steam sterilization up to 134 °C (4)</td></tr>
<tr><td>Nozzle with fingertip</td><td colspan="5">Disposable item, re-use not permitted. Use new part for every patient.</td></tr>
<tr><td rowspan="3">Disposable collection canister</td><td>Collection canister</td><td rowspan="2">In warm water with a mild detergent</td><td rowspan="2">Immerse in dilute solution (3)</td><td>Rinse at up to 95 °C</td><td>Steam sterilization up to 121 °C (5)</td></tr>
<tr><td>Vacuum tube</td><td colspan="2">Not permitted</td></tr>
<tr><td>Aspiration tube with fingertip</td><td colspan="5">Disposable item, re-use not permitted. Use new part for every patient.</td></tr>
</table>

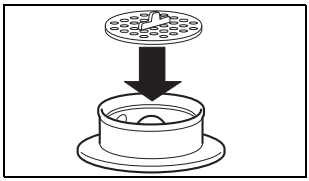
Part	Cleaning	Disinfecting	Rinse in washing machine	Sterilization
Motor unit	Wipe with damp cloth	Disinfectant wipe	Not permitted	
Tube holder plate	In warm water with a mild detergent	Immerse in dilute solution (3)	Rinse at up to 40 °C	Not permitted
Accessory bag			30 °C cycle in a washing machine (no spin), using a suitable disinfecting additive	

(1) Always dry the filter before using it again. A damp filter reduces the pump's suction capacity.
(2) Do not use any surfactants or alcohol for cleaning, as they can adversely affect the hydrophobic properties of the filter.
(3) After disinfection, rinse the parts thoroughly with distilled water and let them dry.
(4) Steam sterilization at 134 °C with devices to EN 285, dwell time 5 minutes.
(5) Steam sterilization at 121 °C with devices to EN 285, dwell time 20 minutes.

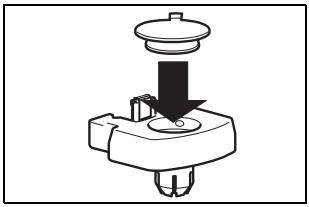
6.3 Reassembly

Re-usable collection canister

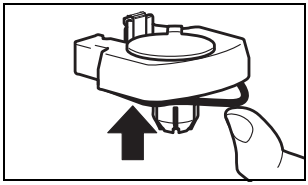
After cleaning, disinfection or sterilization, reassemble the parts as follows:



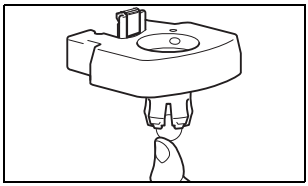
1. Insert filter in filter cover. Make sure that the filter is correctly seated in the groove in the filter cover.



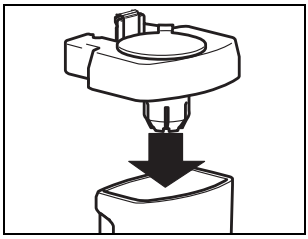
2. Fully insert filter cover into secretion cover.



3. Press sealing ring into groove in secretion cover.



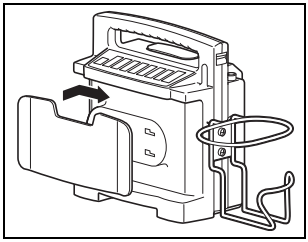
4. Press the ball of the overfill system fully into its housing in the secretion cover.
5. Check the proper fit of bracing clip.



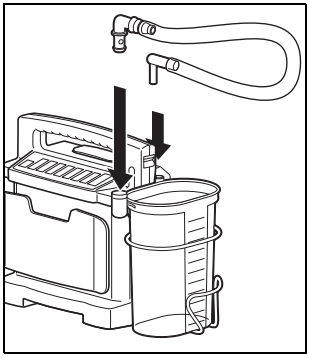
6. Place the secretion cover on the collection canister.
7. Fit the aspiration tube.
8. Attach collection canister to appliance case.
9. Refit the tube holder plate by sliding it to the right.

Disposable collection canister

After cleaning, disinfection or sterilization, reassemble the parts as follows:



1. Refit tube holder plate by sliding it to the right.
2. Put the disposable collection canister in the holder.



3. Connect the collection canister to the intake connector of the motor unit via the vacuum tube.
4. Insert a new disposable collection bag (see “4.4 Inserting the disposable collection bag” on page 18).

7. Functional check

If the functional check reveals defects or deviations from the specified values, the ACCUVAC Rescue must not be used again until the faults have been rectified (see "8. Troubleshooting" on page 39).

7.1 Intervals

To ensure that a properly functioning ACCUVAC Rescue is always available, it is essential to observe the following intervals.

Before every use

- Perform a functional check (see "7.2 Performing the leak check" on page 37).

After every use

- Clean, disinfect and/or sterilize the unit and its parts (see "6. Hygienic preparation" on page 29);
- Clean, disinfect and/or sterilize the vacuum tube and the disposable collection canister as required;
- Perform a functional check (see "7.2 Performing the leak check" on page 37).

Every 6 weeks

- Check the power pack charge level by switching on the ACCUVAC Rescue and reading the capacity indicator. If the capacity is 30 % or less, you should recharge the power pack (see "5.4 Charging the ACCUVAC Rescue" on page 26).

At least every 6 months

- Perform a functional check (see "7.2 Performing the leak check" on page 37).
- Make a visual inspection of the muffler for clogging. If it is clogged, fit a new muffler (see "8.3 Changing the muffler" on page 46).

After all repairs

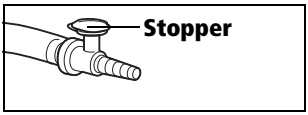
- Clean, disinfect and/or sterilize the unit and its parts (see "6. Hygienic preparation" on page 29);
- Perform a functional check (see "7.2 Performing the leak check" on page 37).

7.2 Performing the leak check

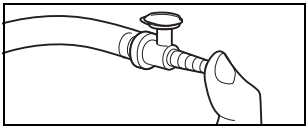
Condition: the tubes on the disposable collection canister system are connected correctly (in the case of the disposable collection canister).

1. Check the following:
   - tubes, collection canister, secretion cover and filter cover (reusable collection canisters)
   - tube and individual parts (disposable collection canisters).
2. Check that the following connections are tight and correct:
   - tube connections, secretion cover and reinforcement clip on the latch (reusable collection canisters)
   - tube connections and disposable collection bag (disposable collection canisters).
3. Switch on the ACCUVAC Rescue. All LEDs light up for one second after switching on. After that, only those LEDs that indicate the operating status stay on. Check the charge level of the power

pack by reading the capacity indicator. If necessary, recharge the power pack (see "5.4 Charging the ACCUVAC Rescue" on page 26).



4. Insert the stopper in the fingertip.



5. Use your thumb to hold the nozzle closed.
6. Switch on the aspirator and preselect the maximum vacuum of –0.8 bar. The ACCUVAC Rescue must reach this vacuum in not more than 20 seconds. You can recognize this by the following:
   - all LEDs from -0.4 bar light up
   - the LED -0.8 bar flashes
   - there is a marked reduction in motor speed or the motor even stops briefly (due to altitude).

   If it takes more than 20 seconds before the pump stops, the suction capacity is reduced. Check for possible faults (see "8. Troubleshooting" on page 39).
7. Open the suction opening of the nozzle. The aspirator must start running again.
8. Preselect a vacuum of –0.3 bar.
9. Close the end of the nozzle again.
10. As soon as the pump stops, select a vacuum of –0.2 bar without opening the fingertip. The vacuum must not fall to –0.2 bar within 10 seconds.

    You can tell that the vacuum is falling off by the fact that the LED above the –0.2 bar button starts flashing and the pump starts up. This means there is a leak. Then check all tube connections and the collection canister.
11. Switch off the ACCUVAC Rescue.

8. Troubleshooting

Fault	Cause	Remedy
Appliance does not start. O/I indicator and capacity indicator show ready for operation	Faulty pump	Have repairs carried out by factory or by expert personnel
Appliance does not start. O/I indicator does not show ready for operation	Fuse F100 or F101 in appliance defective	Fit new fuse (8.2, page 44)
	Fuse in vehicle plug defective	Fit new fuse (8.2, page 44)
	Power pack fully discharged	Perform several charge/discharge cycles. If unsuccessful, fit new power pack (8.1, page 40)
	Incorrect polarity of vehicle power socket	Correct polarity and if necessary replace fuse F100 (8.2, page 44)
	Snap-in connection between circuit board and power pack not properly engaged	Make sure connection snaps in
Appliance will not switch on or off	Electronic fault	Have it repaired
Appliance does not reach maximum vacuum of –0.8 bar in 20 seconds, but capacity indicator shows ready for operation	Leak in suction side of appliance	Reusable collection canister: Check that all tubes are securely connected and that filter cover and secretion cover are firmly installed. Disposable collection canister: check that the tube connections and the disposable collection bag are firmly located.
	Power pack not sufficiently charged	Charge power pack (5.4, page 26)
	Fault in pump	Have repairs carried out by factory or by expert personnel.
With vacuum set to –0.2 bar or more, the LED for –0.1 bar or –0,15 bar is permanently on	Bacteria filter clogged	Fit new filter (6.3, page 33)
Green 10% LED flashing.	Capacity counter cleared. Charging and aspiration continue to work properly despite this message	Calibrate (see " Calibrating the capacity indicator" on page 43)

Fault	Cause	Remedy
Not charging	External power supply too weak.	External power supply must be between 12.0 and 13.8 V.
	Temperature of power pack too high. No charging possible above +40° C	Allow appliance to cool below +40° C
	Temperature of power pack too low. No charging possible below +5° C	Warm appliance to above +5° C
	Fuse F100 or F101 defective	Fit new fuse (8.2, page 44)
	Fuse in vehicle plug defective	Fit new fuse (8.2, page 44)
	Snap-in connection between power pack and circuit board not properly engaged	Make sure connection snaps in
100% LED does not light up on completion of charging	Charger does not meet specifications	Use mains / charger unit FW7405M/ 14, complete WM 2610 (accessory)
	Vehicle electrical system is not supplying 12.0 – 13.8 V ⎓	Check vehicle electrical system
	Capacity counter out of adjustment	Calibrate (see " Calibrating the capacity indicator" on page 43)
	Power pack damaged by being fully discharged	Perform several charge/discharge cycles. If unsuccessful, fit new power pack (8.1, page 40).
	Power pack at end of service life	

8.1 Power pack

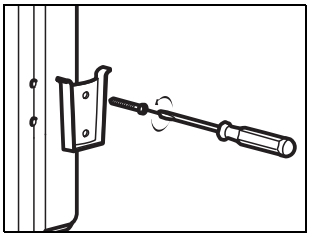
The ACCUVAC Rescue is fitted with a high-grade nickel-cadmium power pack.

Changing the power pack

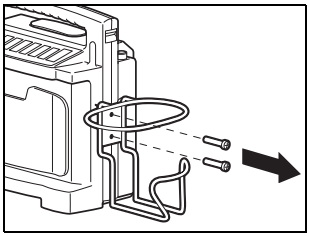
Important! Never touch the circuit board, as this can damage the electronic system.

1. Switch off the ACCUVAC Rescue.
2. Disconnect the aspirator from the external power supply.

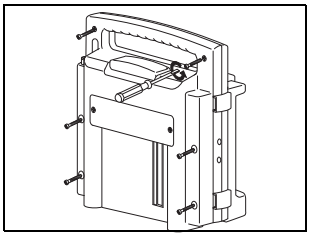
3. Remove the collection canister and any accessories.



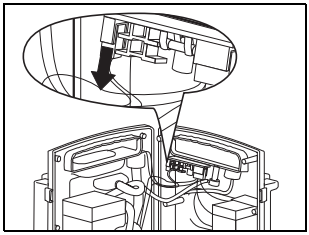
4. If a reusable collection canister is used: unscrew the bracket.



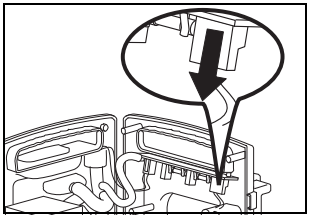
5. If a disposable collection canister is used: unscrew the holder.



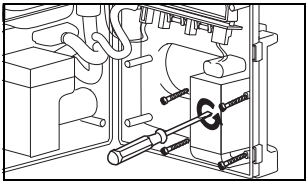
6. Open the case by unscrewing the 6 cross-head screws. When opening the case, be careful not to damage the silicone sealing cord.



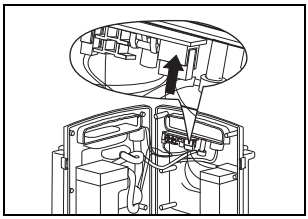
7. Carefully disconnect the **X200** plug connector from the main circuit board.



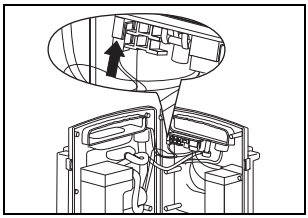
8. Carefully disconnect the power pack connector **X102** from the circuit board.



9. Unscrew the power pack holder (4 cross-head screws).
10. Remove and dispose of the defective power pack (see "9.2 Disposal" on page 47).
11. Wait half a minute before fitting the new power pack. This will allow the capacitors on the circuit board to discharge.
12. Fit the new power pack with its holder.



13. Carefully push power pack connector **X102** onto the circuit board until it snaps into place.



14. Carefully connect the **X200** electrical plug connector.
15. Screw the case together again, making sure that the silicone sealing cord is correctly inserted and is not jammed or otherwise damaged.
16. Perform calibration (see " Calibrating the capacity indicator" on page 43).

    The green 10% LED of the capacity indicator continues to flash until the electronic control system is synchronized with the power pack. Although the ACCUVAC Rescue will function when the power pack is charged, the indicator will not show the charge status of the power pack unless the system is calibrated.
17. Perform a functional check (see "7.2 Performing the leak check" on page 37).

Calibrating the capacity indicator

Calibration matches the capacity indicator to the energy content of the power pack.

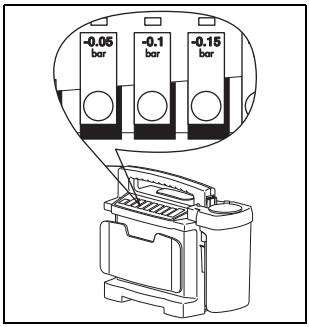
The power pack must be calibrated:

- every time a new power pack is fitted;
- every time a new fuse F100 or F101 is fitted;
- if the 10 % LED is flashing.

Note If you have not yet calibrated a newly-fitted power pack and you switch off the device, the green 10 % LED will carry on flashing for 4 min.

Perform calibration as follows:

1. Charge the ACCUVAC Rescue for about 5 minutes.
2. Disconnect the ACCUVAC Rescue from the external power supply.
3. Press the **O/I** button to switch on the ACCUVAC Rescue.



4. Press the following three buttons simultaneously:
   -0.05 bar, **-0.1 bar**, **-0.15 bar**.

   The power pack is now being calibrated. All the LEDs in the capacity indicator strip are flashing.

5. Press the **-0.8 bar** button.

   The pump now runs at the highest speed and the power pack discharges until it is completely empty without suffering any damage. Once the power pack is discharged, the pump stops auto-

matically. With an empty power pack the calibration process takes about 5 minutes, with a full power pack up to 45 minutes.

Note The green 10 % LED does not go out after emptying, but remains illuminated until the power pack has been fully charged for the first time.

6. Now connect the ACCUVAC Rescue to an external power supply in order to recharge it. The charging process takes about 2 hours.

Note The operating light is on during the charging process. The green 10 % LED and the red LED are part of the operating light and do not come on separately.

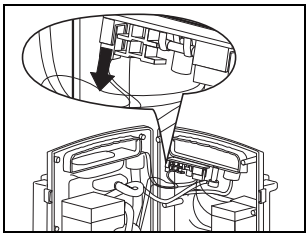
If the pump ran for a long time when discharging because of substantial residual capacity in the power pack, this may have heated up the power pack. In this case charging will not start until the power pack has cooled down below 40 °C. Depending on residual capacity this may take up to 45 minutes.

8.2 Changing fuses

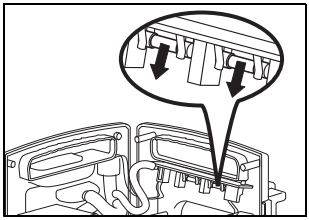
Changing fuse F100 or F101

Important Never touch the circuit board, as this can damage the electronic system.

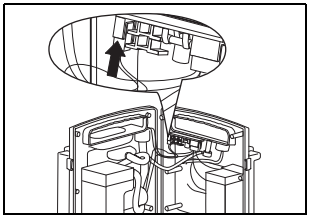
1. Unscrew the case of the ACCUVAC Rescue (see " Changing the power pack" on page 40).



2. Carefully disconnect the **X200** plug connector from the main circuit board.

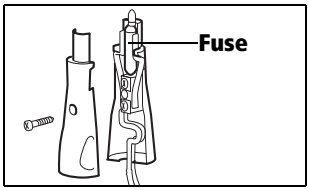


3. Remove the faulty fuse /. The fuses are identified on the circuit board.
4. Insert a new fuse. Always use approved fuses (see "11. Technical Data" on page 51).



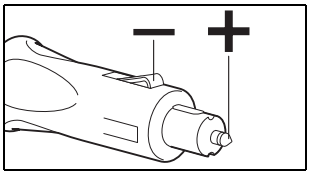
5. Carefully connect the **X200** electrical plug connector.
6. Screw the case together again, making sure that the silicone sealing cord is correctly inserted and is not jammed or otherwise damaged.
7. Perform calibration if you have removed fuse F101 from its holder (see " Calibrating the capacity indicator" on page 43).
8. Perform a functional check (see "7.2 Performing the leak check" on page 37).

Changing fuse in vehicle plug



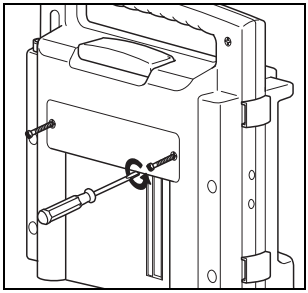
1. Use a screwdriver to open the vehicle plug.

   Note:
   The central contact of the plug is the plus pole. The plus lead of the cable has either a square cross-
   section or colored markings.
   The outer contact of the plug is the minus pole. The minus lead of the cable is round and black.

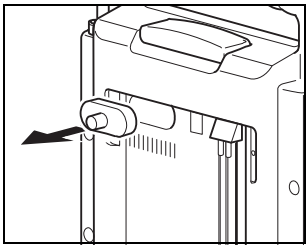


   Caution: Check the vehicle plug for correct polarity. Reversed polarity can damage ACCUVAC Rescue.
2. Change the faulty fuse. Use only approved fuses (see "11. Technical Data" on page 51).
3. Screw the vehicle plug together again.
4. Perform a functional check (see "7.2 Performing the leak check" on page 37).

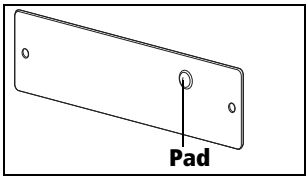
8.3 Changing the muffler



1. Use a screwdriver to unscrew the cover plate (2 cross-head screws).



2. Remove the old muffler.
3. Insert a new muffler.



4. Refit the cover plate. Make sure that the pad stuck to the cover plate is pressing against the muffler.
5. Perform a functional check (see "7.2 Performing the leak check" on page 37).

9. Maintenance

9.1 Intervals

The ACCUVAC Rescue requires no maintenance, but please observe the intervals specified for regular functional checks (see "7.1 Intervals" on page 36).

To maintain battery operation and service life we recommend performing calibration every 8 weeks according to item . This process involves the necessary specific battery discharging and recharging.

We recommend that you have any servicing, such as inspections and repair work, carried out by the manufacturer – WEINMANN Emergency – or by expert personnel.

9.2 Disposal

To dispose of the unit properly, please contact a licensed and certified electronic waste disposal merchant. Names and addresses can be obtained from your Environmental Officer or municipal authorities. The unit packaging (cardboard box and inserts) can be disposed of as waste paper.

Disposing of batteries/rechargeable batteries

Used batteries/rechargeable batteries may not be disposed of in domestic waste. Contact WEINMANN Emergency or your local authority waste disposal department.

10. Scope of supply

10.1 Standard scope of supply

ACCUVAC Rescue with re-usable collection canister

1. ACCUVAC Rescue with re-usable collection canister, complete WM 10600

   consisting of:

   – ACCUVAC Rescue, basic device
   – Re-usable collection canister, complete WM 10630
   – Filter, complete WM 10675
   – Connection cable WM 10650

2. ACCUVAC Rescue with re-usable collection canister and accessories WM 10620

   consisting of:

   – ACCUVAC Rescue, basic device
   – Re-usable collection canister, complete WM 10630
   – Filter, complete WM 10675
   – Accessories bag WM 10655
   – Set, wall bracket incl. assembly set WM 15208

ACCUVAC Rescue with disposable collection canister

1. ACCUVAC Rescue with disposable collection canister Serres®, complete WM 10811

   consisting of:

   - ACCUVAC Rescue, basic device
   - Disposable collection canister Serres®, complete WM 10790
   - Canister holder for Disposable collection canister Serres® WM 15931
   - Disposable aspiration tube WM 10778
   - Disposable collection bag Serres®
   - Vacuum tube Serres® WM 10795
   - Connection cable WM 10650

2. ACCUVAC Rescue with disposable collection canister Serres® and accessories WM 10812

   consisting of:

   - ACCUVAC Rescue, basic device
   - Disposable collection canister Serres®, complete WM 10790
   - Canister holder for Disposable collection canister Serres® WM 15931
   - Disposable aspiration tube WM 10778
   - Disposable collection bag Serres®
   - Vacuum tube Serres® WM 10795
   - Connection cable WM 10650
   - Accessories bag WM 10655
   - Set, wall bracket incl. assembly set WM 15208

10.2 Accessories

You can order accessories separately if required. A current list of accessories can be ordered on the Internet at www.weinmann-emergency.de or through your specialist dealer.

10.3 Spare parts

You can order replacement parts separately if necessary. A current list of replacement parts can be ordered on the Internet at www.weinmann-emergency.de or through your specialist dealer.

11. Technical Data

	ACCUVAC Rescue
Appliance class 93/42/EEC	II b
Dimensions WxHxD in mm	370 x 280 x 140 (with re-usable collection canister) 380 x 280 x 140 (with disposable collection canister)
Weight	approx. 5 kg
Canister volume	1000 ml
Suction capacity at 12 V with free flow	> 20 l/min
Max. vacuum at 12 V	0.8 bar (80 kPa)
Aspiration tube	Ø 10 mm, length 1300 mm (re-usable collection canister) Ø 7 mm, length 1800 mm (disposable collection canister)
Filter (reusable)	Hydrophobic filter nonwoven with 99.999 % retention of bacteria at 0.027 µm
Overflow valve filter (disposable)	Retention of min. 99.8 % related to particles of 2.8 µm
Motor output	50 W
Rated voltage	12 V
Maximum current consumption	3.7 A
Temperature range – Operation – Charging – Storage	 –18 °C to +50 °C + 5 °C to +40 °C –40 °C to +70 °C
Humidity	30 % – 75 % rel. humidity

	ACCUVAC Rescue
Electromagnetic compatibility: – Radio interference suppression – Radio interference resistance	 EN 60601-1-2 EN 55011 IEC 1000-4 Parts 2–5 & 11
Classification according to EN 60601-1: – Protection against electric shock: class II – Degree of protection against electric shock: BF – Degree of protection against water: IPX1 (drip-water)	
Classification according to EN ISO 10079-1: – high vacuum/high flow	
Standards applied	EN 60601-1 EN 60601-1-2 EN ISO 10079-1 EN 1789
Vehicle plug fuse	8 A, DIN 72581, identification color white
Internal fuse F100 external power supply	4 A slow-acting, low breaking capacity G fuse links 5x20 mm, conforms to IEC 127
Internal fuse F101 power pack	4 A slow-acting, low breaking capacity G fuse links 5x20 mm, conforms to IEC 127
Power pack type	Nickel cadmium 2.8 Ah
Charging voltage	12.0 to 13.8 V⎓
Operating time after charging for 2 hours	45 min at maximum suction
Operating mode	S2 60 min
Service life of power pack	400 charge/discharge cycles in approx. 3 years
Battery charging time	2.5 h

	ACCUVAC Rescue
Average sound pressure level at -0.8 bar	≤ 62 dB(A)
Materials	
Re-usable collection canister:	
– Collection canister	APEC
– Secretion cover	Silicone
– Bracing clip	Stainless steel
– Ball	PVDF
– Filter cover	Silicone
– Filter holder	APEC
– Tubes	Silicone
– Nozzle with fingertip	PE

	ACCUVAC Rescue
Disposable collection canister:	
– Collection canister	PC and thermoplastic elastomer
– Secretion cover	PP
– Disposable collection bag	Medical-grade PVC
– Tubes	Medical-grade PVC
– Nozzle with fingertip	PE
Holder	Constructional steel, non-alloy, St 50-2
Case	PC/ABS
Tube holder plate	ABS

CE 0197

Subject to technical change without notice.

11.1 Safe distances

The ACCUVAC Rescue is intended for operation in an electromagnetic environment in which high-frequency interference variables are controlled. The customer or user of the ACCUVAC Rescue can help avoid electromagnetic interference by maintaining the minimum safe distance between portable and mobile high-frequency telecommunication devices (transmitters) and the ACCUVAC Rescue depending on the rated output of the transmitter as given below.

Recommended safe distances between portable or mobile HF telecommunication devices (e.g. mobile phones) and the ACCUVAC Rescue			
Rated output of HF device in W	**Safe distance depending on transmission frequency in m**		
	150 kHz - 80 MHz d=(3,5/V1) x √P	**80 MHz - 800 MHz d=(3,5/V1) x √P**	**800 MHz – 2,5 GHz d=(3,5/V1) x √P**
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.17	1.17	2.33
10	3.69	3.69	7.38
100	11.67	11.67	23.33

12. Warranty

Starting from the date of purchase, WEINMANN Emergency offers the customer a limited manufacturer's warranty on a new original WEINMANN Emergency product or replacement parts installed by WEINMANN Emergency in accordance with applicable warranty terms and conditions for the particular product and the warranty periods listed below. The warranty terms and conditions are available on the Internet at www.weinmann-emergency.de. On request, we will send you the warranty terms and conditions by mail.

If you wish to make a warranty claim, consult your authorized dealer.

Product	Warranty periods
WEINMANN Emergency devices, incl. accessories (excluding: masks), for oxygen therapy, and emergency medicine	2 years
Masks, incl. accessories, batteries (unless otherwise stated in the technical documentation), sensors, hose systems	6 months
Disposable products	None

13. Declaration of conformity

WEINMANN Emergency Medical Technology GmbH & Co. KG declares herewith that the product complies fully with the respective regulations of the Medical Device Directive 93/42/EEC. The unabridged text of the Declaration of Conformity can be found on our website at www.weinmann-emergency.de

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partner for life

WEINMANN
medical technology