



Instrument description and operating instructions

ACCUVAC

Electrical suction pump

WM 10900

WEINMANN

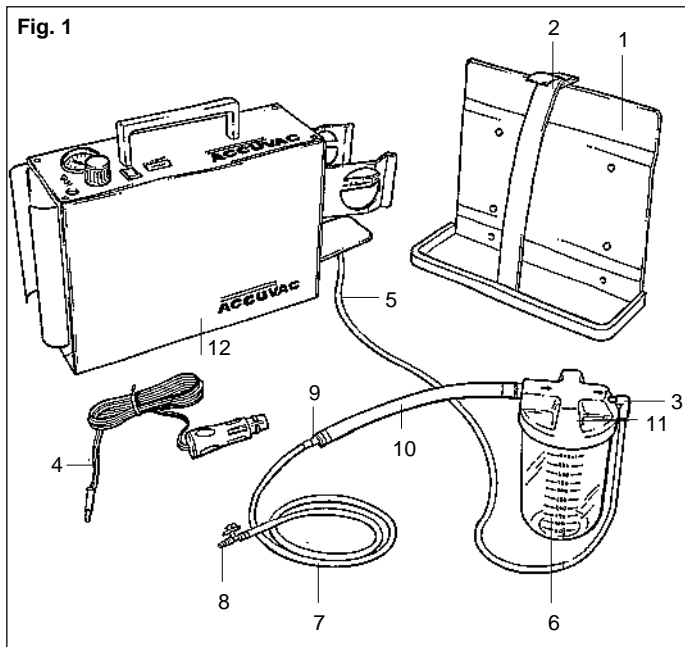
Contents

Page

Diagrams and Key

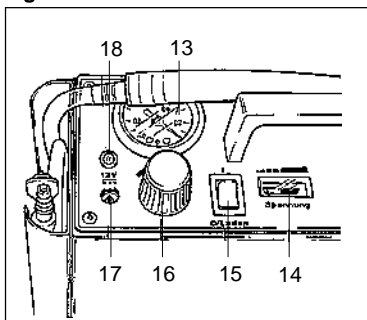
1. Instrument Description	3
1.1. Purpose	3
1.2. Function	3
2. Technical Data	4
3. Extent of Supply	5
4. Accessories and Spare Parts	5
4.1. Accessories	5
4.2. Spare Parts	5
5. Operation	6
5.1. Putting into use	6
5.2. After use	7
5.3. Charging	8
6. Disinfection and Sterilization	9
7. Checking the Function	10
8. Maintenance	10
9. Safety Hints	11
10. Guarantee	11
11. Fault Finding	12
11.1. Procedure for changing the ACCU WM 2659	13
11.2. Procedure for changing the fuse F1, F2	15

Fig. 1



- | | |
|------------------------------|-----------------------------------|
| 1 Wall mount | 7 Fine suction hose (1st stage) |
| 2 Safety strap | 8 Secretion nozzle with fingertip |
| 3 Angled hose socket | 9 Connector |
| 4 Connecting cable with plug | 10 Thick suction hose (2nd stage) |
| 5 Connecting hose | 11 Secretion cap |
| 6 Secretion bottle | 12 Motor unit |

Fig. 2



- | |
|----------------------------|
| 13 Pressure gauge |
| 14 Voltmeter |
| 15 Rocker switch |
| 16 Control knob |
| 17 Connecting bush |
| 18 Charge control |
| (from issue-no. 1990-2000) |

1. Instrument Description

1. 1. Purpose

The ACCUVAC aspirator WM 10900 is a portable, electrically operated suction pump, which can be powered by a built-in, rechargeable battery or by a 12 volt direct current source.

It is used in emergency medicine for aspiration of fairly large accumulations of blood, mucus, saliva, etc. and of viscous and solid food particles.

This prevents displacement of the airways and eliminates the risk of inhalation. The ACCUVAC suction pump can also be used to evacuate vacuum mattresses.

Remark: ACCUVAC is suitable to be used also in patient bedrooms.

1. 2. Function

An electrically operated diaphragm pump creates the negative pressure necessary for aspiration. Power supply is from a built-in 12 volt ACCU. Alternatively, the ACCUVAC can also be connected to a 12 volt vehicle power supply via the connecting bush (17), using the connecting cable (4).

The voltmeter (14) shows the operating state. If the pointer is in the black zone, the instrument is ready for use; if it is entering the red zone, the ACCUVAC must immediately be charged during 14 hours (risk of complete discharging).

Where a vehicle electrical circuit is available, the ACCU is automatically recharged when the rocker switch (15) is set to the position "O/Charge". The charge-control light (18*) shows the charging process. The angled hose socket (3) on the motor unit (12) is connected to the secretion cap (11) via the connecting hose (5).

The secretion can infinitely be adjusted by means of the control knob (16) and the value set can be read-off at the pressure gauge (13).

The aspirated material passes through the suction hose, consisting of the fine suction hose (7) – 1st stage – and the wide suction hose (10) – 2nd stage – into the secretion bottle (6).

The ACCUVAC can also be operated with the power pack/ battery charger, available as an accessory.

* from issue-no. 1990-2000

2. Technical Data

Dimensions:	385 x 230 x 95 mm (WxHxD)
Weight:	5.9 kg
Secretion bottle volume:	500 ml
Suction hose, complete:	1030 mm length
1st stage suction hose:	800 mm length, Ø 6 mm
2nd stage suction hose:	230 mm length, Ø 10 mm
Connecting hose:	1200 mm length, Ø 4 mm
Suction power:	approx. 15 l/min sucking air
Vacuum obtainable:	- 0.8 bar
Motor power:	30 W
Rated voltage:	12 V ===
Electrical input:	2.5 A
Electro-magnetic compatibility	
- Radio-interference suppression:	EN 55011 (VDE 0875 T.11)
- Radio-interference resistance:	IEC 801 part 2 to 5
Classification acc. to VDE 0750	
- protection against electr. shock:	protecting class 1
- protecting degree against electr. shock:	Typ BF
Fuse Instrument (F1):	T4L 250V
Fuse Instrument (F2):	T4L 250V
Fuse vehicle connecting plug:	8 A
Charging voltage:	13.8 to 14 V
Independent operating time after 14-hour charging:	approx. 75 min
Lifetime ACCU:	approx. 3 years equivalent to approx. 200 charge/discharge cycles
Storage temperature range:	-20°C to +50°C
Operating temperature range*:	-15°C to +40°C

(Subject to changes in construction)



Remark: Validity of TÜV/GS labelling from instrument-no. 4000

* Attention to freezing level of liquids

3. Extent of Supply

ACCUVAC electrical suction pump	WM	10900
consisting of:		
ACCUVAC motor unit	WM	10910
Secretion aspirator	WM	10920
Wall mount	WM	10930
Connecting cable (ACCUVAC/vehicle circuit with built-in 8 A fuse)	WM	2676

4. Accessories and Spare Parts

4.1. Accessories

Aspiration catheter, sterile pack, Ch. 06, Ø 2,0 mm, length 50 cm, pack of 2	WM	5155
Aspiration catheter, sterile pack, Ch. 10, Ø 3,3 mm, length 50 cm, pack of 4	WM	5157
Aspiration catheter, sterile pack, length Ch. 12, Ø 4,0 mm, length 50 cm, pack of 1	WM	5159
Power pack/battery charger for connection to 230 V alternating current	WM	2645

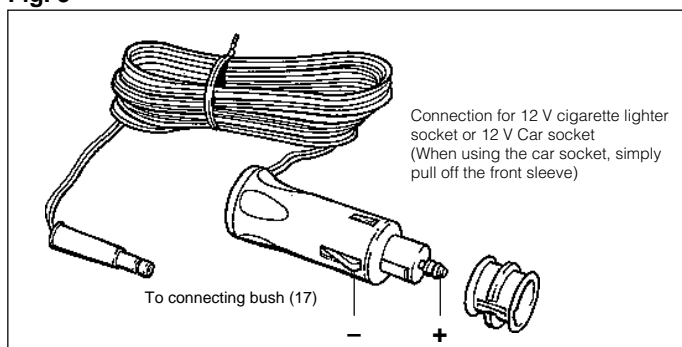
4.2. Spare Parts

Connecting hose	WM	1924
Secretion cap	WM	2182
Fine suction hose (1st stage)	WM	2203
Secretion nozzle with fingertip	WM	2251
Angled hose socket	WM	2252
Connector	WM	2261
Secretion bottle	WM	2273
Accumulator: Panasonic LCR 12 V 6,5P (12 V;6.5Ah)	WM	2659
Connecting cable: (ACCUVAC/vehicle circuit with built-in 8A fuse)	WM	2676
Microfuse T4L 250V (F1; F2)	WM	2692
Adaptor ND 10, 13/13	WM	4627
Security strap	WM	10921
Wide suction hose (2nd stage)	WM	10948

5. Operation

ACCUVAC is supplied ready for operation. For use in a vehicle, it only needs to be connected to the 12 V electric circuit via the connecting cable (4). Take care of correct polarity of the 12 V vehicle circuit, as otherwise the instrument does not work.

Fig. 3



5.1. Putting into use

- Set the rocker switch (15) to the position "I".
- Seal the front suction opening of the secretion nozzle with the thumb and close the fingertip with the stopper.
- Set the suction required at the control knob (16) and check it at the pressure gauge (13).

The instrument is now ready for use.

If necessary, different sizes of aspiration catheters for tracheal and nasopharyngeal aspiration can be connected to the aspiration hose via the taper adapter on the secretion nozzle (8). For effective aspiration of viscous and solid food particles, simply insert the wide suction hose (10) – stage 2 – directly into the patient's pharyngo-oral cavity.

First remove the fine suction hose (7) - 1st stage - with the connector (9) from the wide suction hose (10) - 2nd stage.

Once the secretion bottle is filled, the overflow protection stops the suction process.

In this case:

- Remove the secretion cap (11).
- Empty the secretion bottle (6).
- Refit the secretion cap (11).
- Continue aspiration.

Important instruction: During suction careful attention has to be paid to the filling level of the secretion bottle (6). The bottle has to be emptied when filling limit is attained in order to avoid dirt and following cleaning expenses to the overflow protection. Dirty overflow protection may cause the risk of damaging the instrument.

During aspiration, the secretion bottle must be placed or held upright [secretion cap (11) pointing upward], so that the overflow protection (ball valve) does not cut off the connection to the suction source.

If the secretion cap (11) is held downwards, the overflow protection cuts in.

In this case, aspiration must be interrupted briefly, by:

- Setting the rocker switch (15) to the "O/Charge" position.
- Turn the control knob (16) anticlockwise [This is only necessary when full vacuum is set, i.e. when the control knob (16) is at the right-hand stop].
- Hold the secretion cap (11) upright until the overflow protection has dropped back.

5.2. After use

After completing aspiration, switch off the instrument [by operating the rocker switch (15)] and empty the secretion bottle (6).

If possible, rinse the secretion cap (11) and the suction hoses with clear water at the spot. Hereto the connecting hose (5) has to be detached from the secretion cap (11) generally.

Reassemble the secretion aspirator as in Fig. 4 and fit the bottle/hose system as shown in Fig. 5+6.

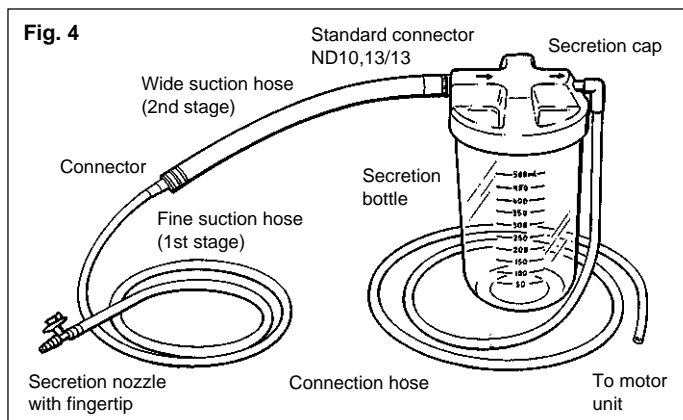
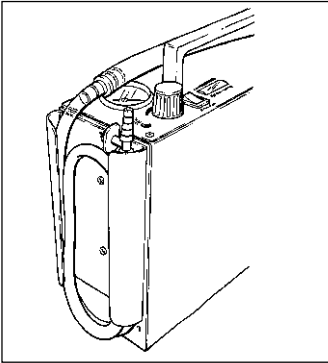
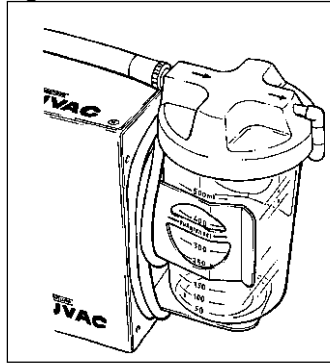


Fig. 5



The fine suction hose (7), 1st stage - is housed in the hose holder.

Fig. 6



The secretion bottle (6) is fitted in the retaining clip.

If the unit has been used outside the vehicle, the ACCUVAC suction pump should be reconnected to the 12 volt vehicle circuit via the connecting cable (4).

Important hint: In order to prevent full discharge, ACCUVAC in no way shall be stored in an uncharged condition but has to be charged as per Pt. 5.3..

5.3. Charging

Because of their construction, charging of maintenance-free lead accumulators is voltage-limited. Delimitation of the charging current is not necessary.

Important operating hint:

To increase the life of the ACCU, the ACCUVAC should be charged during 14 hours every 14 days with the power pack/battery charger available as an accessory. This unit (cat.no. WM 2645) guarantees that the necessary charging voltage of 13.8 to 14 volts is achieved and fulfills the security instructions of IEC 601/VDE 0750.

If the **ACCUVAC** charge has run down - which is the case when the pointer of the voltmeter (14) comes to rest outside the black zone – the ACCU must immediately be charged during 14 hours with 13.8 to 14 volts (A.C. power pack/battery charger WM 2645).

Charging procedure:

For charging on 12 V vehicle circuit:

- Set the rocker switch (15) to the position "O/Charge".
- Push the angled plug on the connecting cable (4) into the connecting bush (17) and connect the car plug to the 12 V circuit (see Fig. 3). The charge control light (18)* shows the charging process.

* from issue-no. 1990-2000

For charging with 220 V alternating current:

- Set the rocker switch (15) to the position "O/Charge".
- Connect the power pack/battery charger (accessory) to the 220 V alternating current source.
- Push the angled plug of the connecting cable (accessory) into the connecting bush (17), connect the brush plug to the power pack/battery charger.
- Switch on the power pack/battery charger. The charge control light (18)* shows the charging process.

6. Disinfection and Sterilization

The ACCUVAC must be cleaned after every aspiration. Hereto the connecting hose (5) has to be detached from the secretion cap (11) generally. Precleaning of the suction tubing (7+10), secretion cap (11) and of the secretion bottle (6) is highly recommended. The motor unit (12) can be kept clean simply by wiping with disinfectant.

The secretion cap, aspiration catheters and hoses should be cleaned in a disinfectant solution commercially available for medical devices (observing the Instructions for Use).

After disinfection, the parts should be rinsed thoroughly with distilled water.

Rubber parts should only be sterilized cold and always left to dry in the air. The secretion bottle as well as the suction tubings (7+10) can be sterilized up to 134°C/273°F. Reassemble the parts after disinfection or sterilization (see Fig. 4).

The function of the instrument **must be checked** before it is used again.

Important notice:

By no means disinfectant may aspirated through the connecting hose (5) into the motor unit (12) which may lead to damages of the instrument.

* from issue-no. 1990-2000

7. Checking the Function

To guarantee satisfactory operation of the ACCUVAC suction pump, the function must be checked every time it is disinfected and sterilized.

Procedure:

- Ensure that the hose connections and secretion cap are tight.
- Check that the hoses are in good condition. Porous or brittle parts must be replaced.
- Switch on the ACCUVAC and check its readiness for use. If the pointer of the voltmeter (14) lies in the boundary zone between the red and black areas, the ACCUVAC must be charged immediately during 14 hours.
- Seal the front suction opening of the secretion nozzle (8) with the thumb and close the fingertip with the stopper.
- Set the maximum vacuum by turning the control knob clockwise. The ACCUVAC should now reach a vacuum of -0.8 bar after 15–20 seconds. The vacuum can be read-off at the pressure gauge (13).
- Switch off the instrument.

8. Maintenance

The function of the ACCUVAC should be checked after each use, but at least every 3 months.

Here the aspiration unit should be cleaned and the ACCU fully charged.

To prolong the lifetime of the ACCU, the instrument has to be recharged immediately when the pointer of the voltmeter leaves the black zone.

In addition, the security strap (2) of the wall mount (1) should be checked for cracks and brittle areas and replaced if necessary.

9. Safety Hints

Attention: This operating instruction is part of the instrument. It must be available all the time.

The detailed knowledge and careful attention to this operating manual is the basis for destined use of the ACCUVAC. All personnel using the instrument or being in charge of controlling and maintenance has to take notice of this operating instructions in order to prevent misuse.

During the aspiration process, it must be ensured that no damage is caused to the patient's mouth or throat, e.g. to the mucous membranes.

The suction can be interrupted briefly by opening the fingertip.

When operating by ACCU the charging condition has to be observed at the pressure gauge (13).

We recommend to have repairs or equivalent measures to be executed by the manufacturer WEINMANN:HAMBURG.

Notice:

The instrument may not be used in medical facilities where electric potentials must be balanced (e.g. heart surgery).

10. Guarantee

Defects arising as result of material or manufacturing faults are guaranteed for a period of one year from the date of delivery. Any defects covered by the guarantee will be rectified under our Guarantee Conditions. Plastic and rubber parts as well as accumulators are not covered by the guarantee. In case of repair transport charges for sending the instrument to the workshops and returning it to sender are completely for customer's account.

WEINMANN:HAMBURG offers no guarantee where the user has impaired the function of the instrument through non-observation of these Operating Instructions, incorrect operation, irregular use or unauthorized interference. In such instances, liability passes to the user.

Important: Guarantee claims are valid only when accompanied by the purchase receipt!

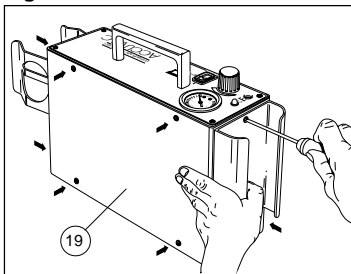
11. Fault Finding

Fault	Cause	Remedy
Instrument does not operate, voltmeter shows readiness for use.	Pump faulty.	Return to manufacturer for repair.
Instrument does not operate, voltmeter does not indicate readiness for use.	Instrument fuse faulty (F1; F2)	Commercial fuse T4L 250V; IEC127-2/3.*
	Fuse of car socket faulty.	Commercial fuse 8 A; 5x20 mm.
	Accu fully discharged.	Carry out several charging and discharging cycles. If unsuccessful, change ACCU.*
	Connecting bush at the vehicle wire wrong polarity.	Check of correct polarity at the vehicles connecting bush (see Fig. 3).
Performance data not obtained, voltmeter shows readiness for use.	Leak in hose system.	Check that hose connection are tight, change secretion cap if necessary.
	Faulty pump.	Return to manufacturer for repair.

* ACCUVAC should only be opened from personnel authorized by the manufacturer.

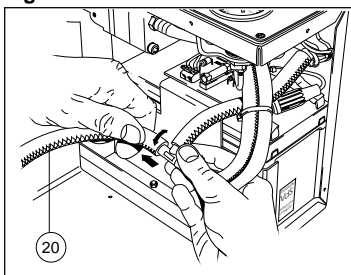
11.1. Procedure for changing the ACCU WM 2659*

Fig. 7



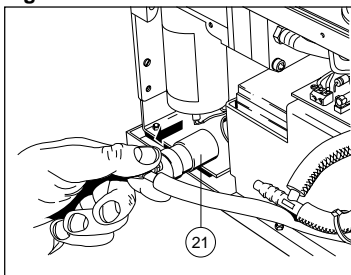
- Switch off the instrument, remove connection tubings.
- Take off the backside (19) of the ACCUVAC box by loosen the 8 fastening screws.

Fig. 8



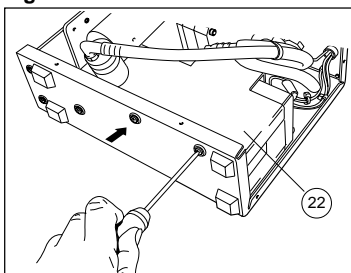
- Pull off the pressure hose (20) from T-hose socket by turning it slightly.

Fig. 9



- Take the silencer (21) out of the holding placing it in front of the instrument.

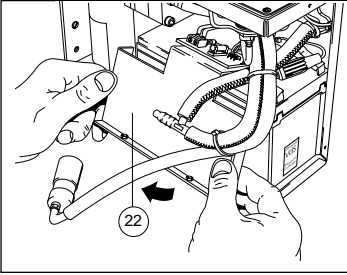
Fig. 10



- Loosen the holding plate (22) via the cross screws at the underside of the front plate.

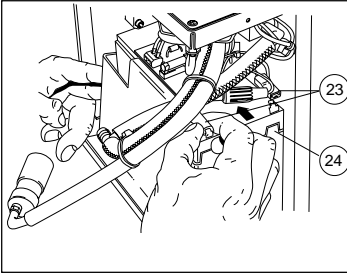
* ACCUVAC should only be opened from personnel authorized by the manufacturer.

Fig. 11



- Carefully clap down the holding plate (22)

Fig. 12

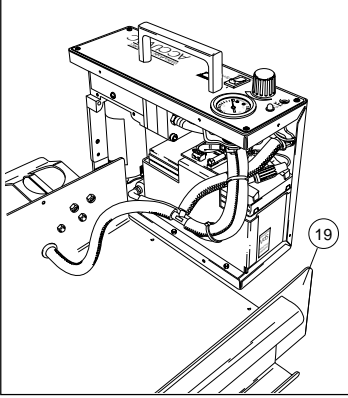


- Loosen the connecting cords (23) from the ACCU (24)
- Remove the ACCU.
- Reassembly: The same steps in opposite order.

Important hint: The ACCU connecting line must not be interchanged with mounting.

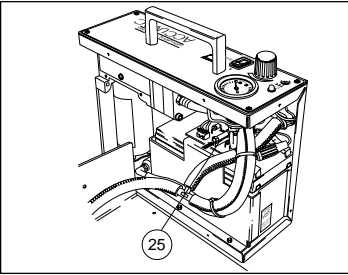
11.2. Procedure for changing the fuse F1, F2*

Fig. 13



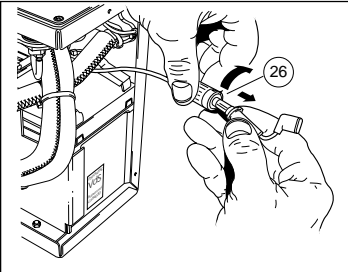
- Switch off the instrument, remove connection tubings.
- Take off the housing backside (19) according to Fig. 7.
- Carefully clap backside forward placing it in accordance with Fig. 13.

Fig. 14



- Replace faulty fuse F2 (25) by taking it out of the holding located on the control panel.

Fig. 15



- Fuse F1 (26) is replaced by loosen the red (+) connecting plug from the ACCU and pulling outside cord connector. Replace faulty fuse out of the cord connector (bayonet lock).
- Reassembly: the same steps in opposite order.

* ACCUVAC should only be opened from personnel authorized by the manufacturer.

EEC-Letter of Conformity ■
on Medical Products ■

We, the manufacturer

GOTTLIEB WEINMANN

Geräte für Medizin und Arbeitsschutz GmbH + Co. KG
Kronsaaalweg 40 · D-22525 Hamburg

declare in sole
responsibility the

Product Name: **Electrical suction pump**


Type / Model: **ACCUVAC**

being in conformity
with the respective
regulations of the
following guideline:

Directive 89 / 336 / EEC about electro-magnetic
compatibility incl. the amendments 92 / 31 / EEC
and 93 / 68 / EEC.

Hamburg, 05.09.1995


Dr. J. Grotzahn
President


Dr. K.-A. Feldhahn
Managing Director
Technology and Logistics

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