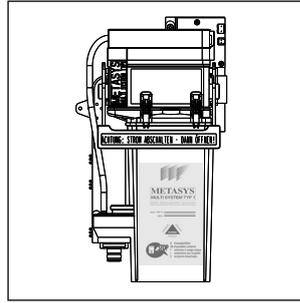


METASYS

GB **Automatic separator**
MULTI SYSTEM TYP 1 ECO Light
Equipment Logbook
Installation, operation and maintenance



Index

Explanation of the pictograms

1. Index

The footnote found on each page defines the user group particular information is aimed at.

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2. Explanation of the pictograms:



Caution!



General warning sign

General information

3. General information



The safety, reliability and performance of the equipment is only guaranteed by METASYS if the following instructions are observed:

- Assembly, alterations or repairs may exclusively be carried out by authorized service personnel in compliance with EN Standard 60601-1 (International Standard for Medical Electrical Apparatus, in particular Part 1: General Rules for Safety).
- The electrical installation must comply with the regulations of the IEC (International Commission for Electrical Engineering).
- The appliance must exclusively be used in conformity with the instructions for installation, operation and maintenance.
- Only original parts may be used for repairs or replacements.
- Following the commissioning of the apparatus, the Installation Proof must be completed and returned to METASYS in order to establish the guarantee period.
- Certificates of recycling for the amalgam waste (provided by recycling company) must be kept in accordance with national regulations.
- Every service and inspection must be recorded in the Equipment Logbook.
- When requested by an authorized engineer, METASYS agrees to make all documents available for the use of technically qualified service personnel.
- METASYS accepts no responsibility for damages caused due to external factors, such as wrong installation, improper use of the apparatus or unauthorized technical intervention.
- When the whole apparatus is dismantled at the end of its service life, it must be disposed of properly.

Use, construction

Explanation of the type plate

4. Use:

The METASYS MULTI SYSTEM TYPE 1 ECO Light (short form: MST 1 ECO Light) is a single-unit automatic air/water separator with integrated heavy parts collector and place selection valve.

5. Construction:

The automatic separator MST 1 ECO Light consists of 2 modules:

1 **Module 1** is the central mounting element; here the air and water connections are located.

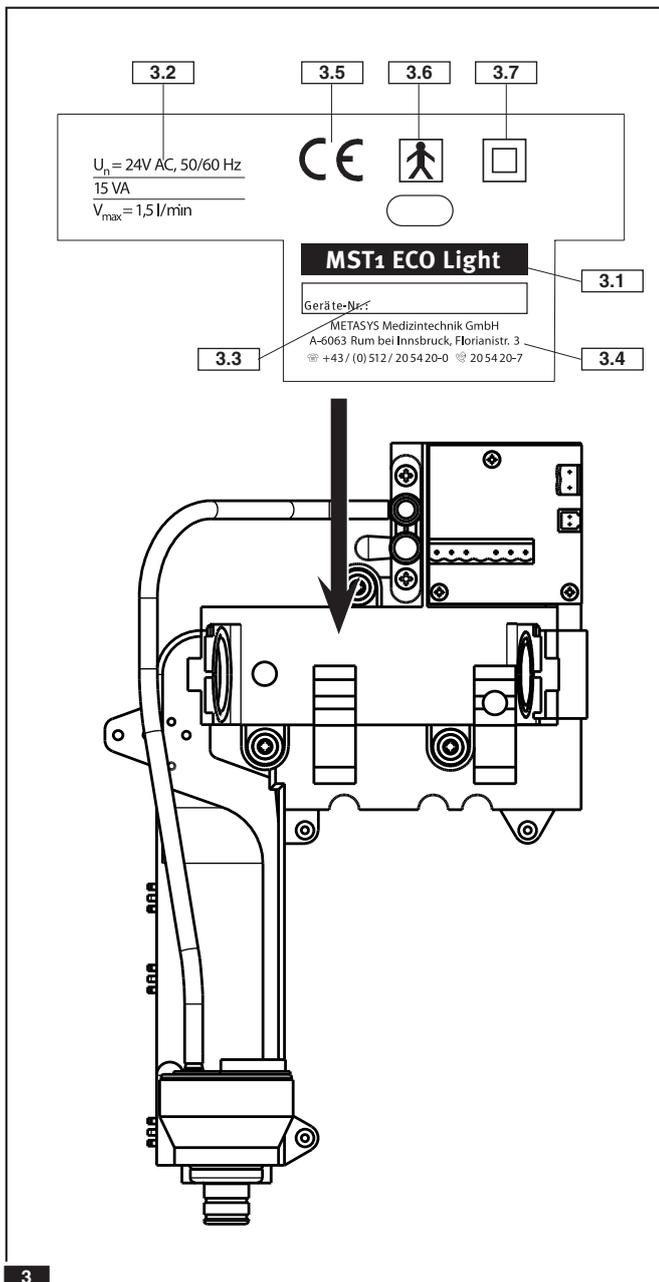
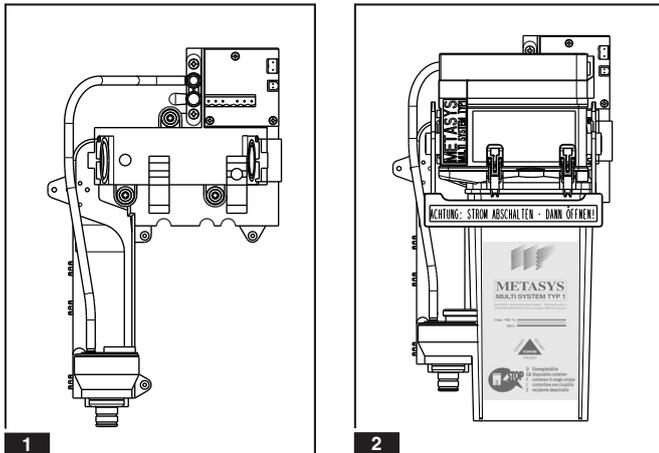
2 **Module 2** is the separation unit and the sedimentation stage of the automatic separator; module 2 contains the collection container, separation, place selection valve and main board.

6. Explanation of the type plate:

3 See illustration

The type plate is located on Module 1 and is visible when Module 2 is removed (for this, lift the yellow locking handle upwards and pull Module 2 forwards out of its fixture).

- 3.1** Equipment type
- 3.2** Mains supply data
- 3.3** Serial number
- 3.4** Address of the manufacturer
- 3.5** CE conformity sign
- 3.6** Type BF sign
- 3.7** Protection class II

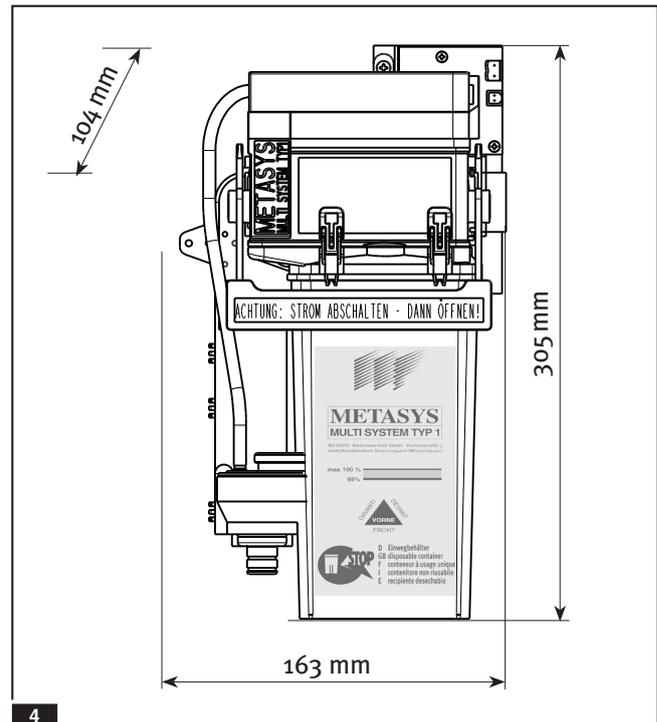


Technical data

Description of function

7. Technical data

Tank capacity	24 V AC
Frequency	50/60 Hz
Max. current consumption	1.5 A
Max. power input	15 V
Low pressure range	50 mbar - 250 mbar
Collection container volume	300 cm ³
Max. ambient temperature	40 °C
Possible suction systems	wet or dry line vacuum generators
Max. water flow rate	1.5 l/min from the suction line
4 see illustration	
Total dimensions (H x W x D)	305 x 163 x 104 mm



8. Description of function

5 See illustration

After lifting a suction hose, the place selection valve **5.1** opens. The suction stream **5.2** is directed into module 2, where by means of the cyclone principle the air/water separation **5.3** takes place.

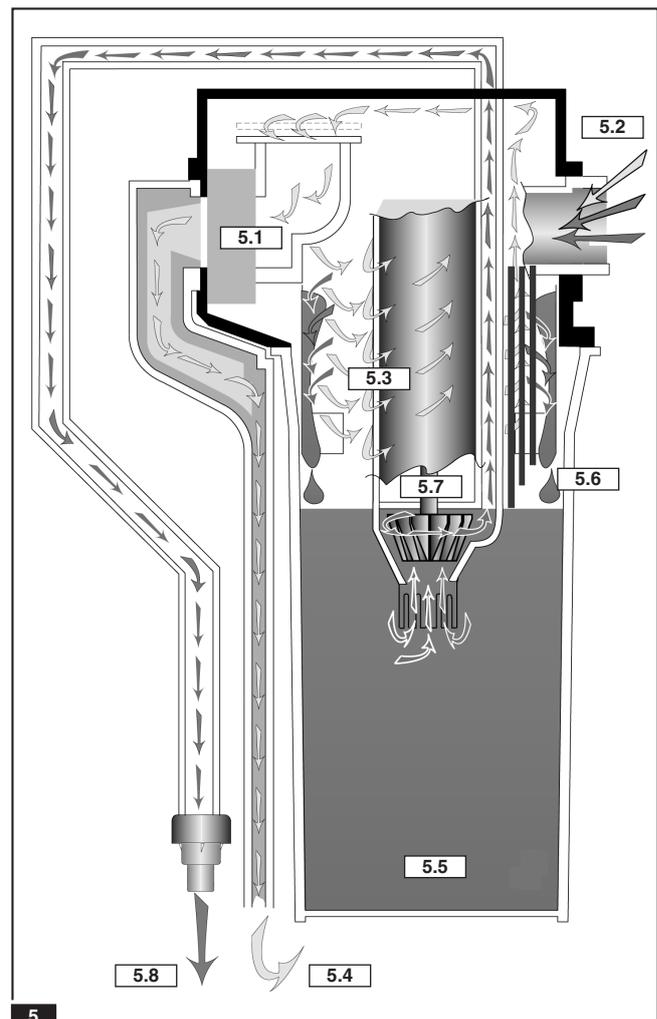
The dry air leaves the system via the place selection valve to the vacuum motor **5.4**.

The liquid and solid components of the suction stream get into the collection container **5.5** below the separation.

While the particles sedimentate in the collection container, the liquid level rises according to sucked off quantity. As soon as a certain level is reached, a probe **5.6** starts the pump motor **5.7** for a certain period of time. The pump transports the precleaned liquid into the water outlet **5.8**.

Waste water coming from the mouth rinsing basin is directly led into the outlet.

A maximum probe (emergency off) prevents the overflowing of the separation chamber by closing the place selection valve. This prevents the liquid from being able to get into the suction motor.



GB

Installation options

Installation guidelines

9. Installation options

The MST 1 ECO Light allows a variety of different installation options:

Options **1** + **2** must comply with the norm IEC 601.

1 Installation into the rinsing basin:

The direct installation of the automatic separator into the rinsing basin should be used as the preferred solution in order to keep tubes and hoses to the automatic separator as short as possible. The unit should be attached to the rinsing bowl in such a way as to keep the vibration levels as low as possible.

2 Installation behind the patient's head (12 o'clock):

If there is no rinsing bowl available in the treatment area, and if the suction unit is mounted behind the head of the patient, then the MST 1 ECO Light can be installed inside a cabinet there too. In this case the connection to the rinsing bowl must be closed with a sealing plug.

3 Installation in an independent housing:

If the integration of the automatic separator into the existing treatment unit is not possible, it can also be placed into a shapely floor box. The housing requires very little floor space and should be mounted onto the connection box of the dental unit. A transformer is already integrated into the housing.

10. Installation guidelines

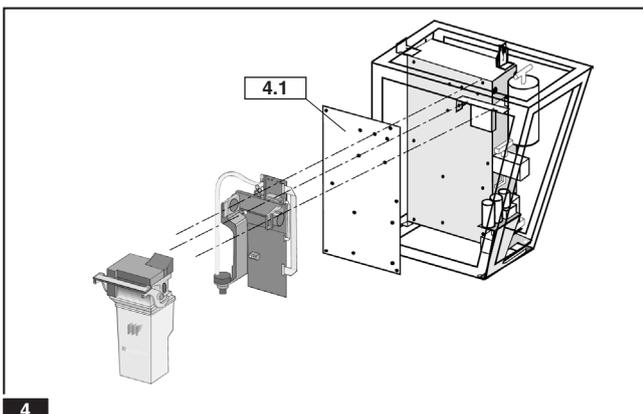
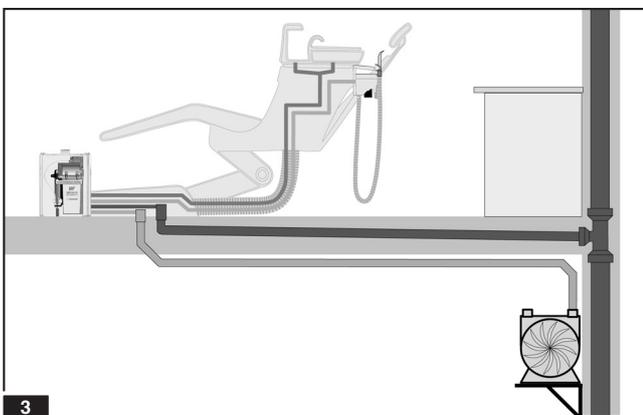
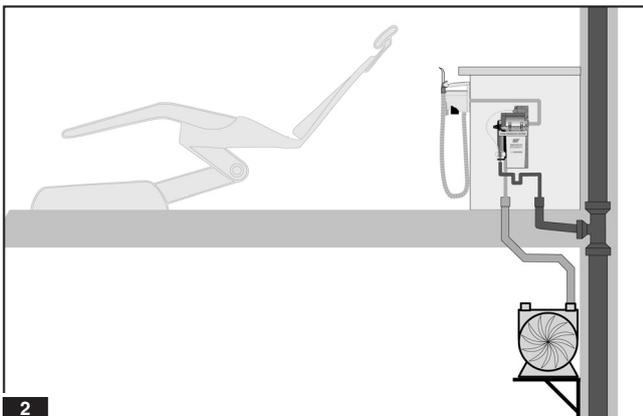
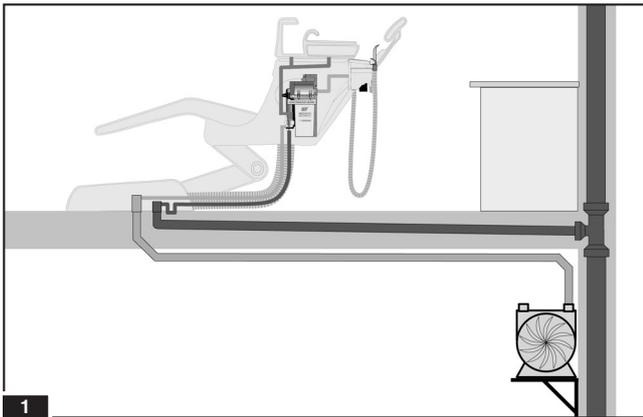
4 Fitting:

For the installation the following space requirements must be met: H x W x D: 350 mm x 205 mm x 120 mm



To reduce vibrations, the device must only be fitted to supporting parts of the treatment unit through the three drill holes on module 1. (Do not remove the swinging fittings!)

*Fit a contact protection plate **4.1** behind module 1 if the background is electrically conducting!*



Installation guidelines

Connections

10. Installation guidelines

5 Prefilter:



If not already installed in the tube holder, a prefilter **5.1** with a mesh width of max. 1 mm must be installed on the suction side of the separator.

6 Hose connections:

The hose connections leading to the MST 1 ECO Light must be kept as short as possible (pre-sedimentation). Dirty dental hoses must be replaced during installation and must be disposed of through DENTAL ECO SERVICE. The automatic separator must be connected with an odour trapseal **6.1** to the waste water pipe. Water driven saliva ejectors should not be used on account of the excessive water consumption.

Main switch:

The connection of the 24 V AC power supply must take place after the device's or surgery's main switch.

11. Connections:

7 Hose connections

- 7.1** Connection for rinsing basin outlet
- 7.2** Connection for suction hose (to the tube holder)
- 7.3** Connection for vacuum hose (to the suction motor)
- 7.4** Connection for waste water (clean water outlet)

Fittings, adapters and adhesives are to be found in our spare parts list (item no. 70200006). Unnecessary connections are to be closed with blind plugs!

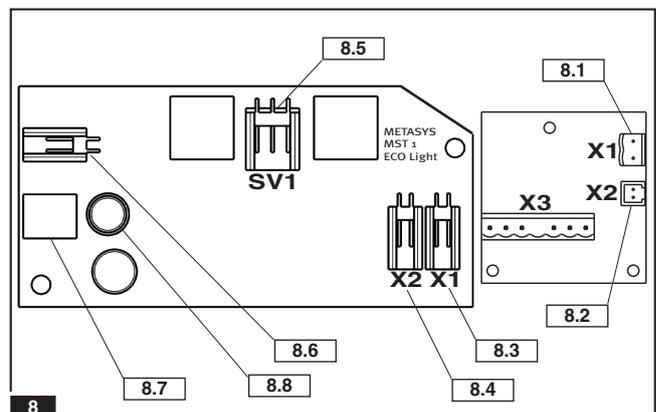
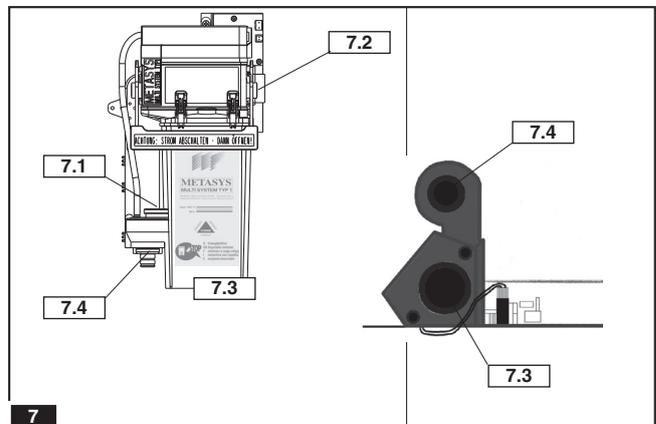
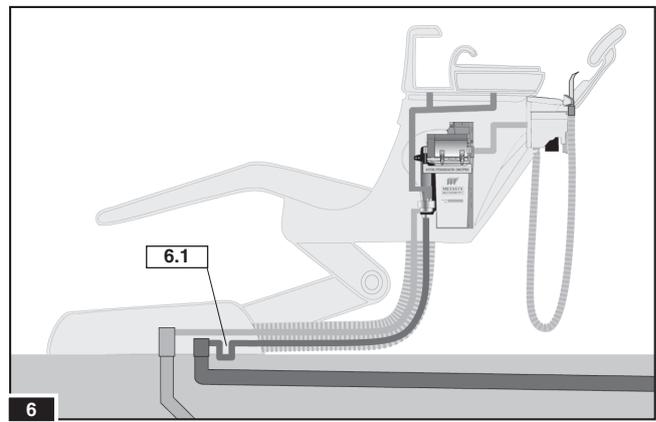
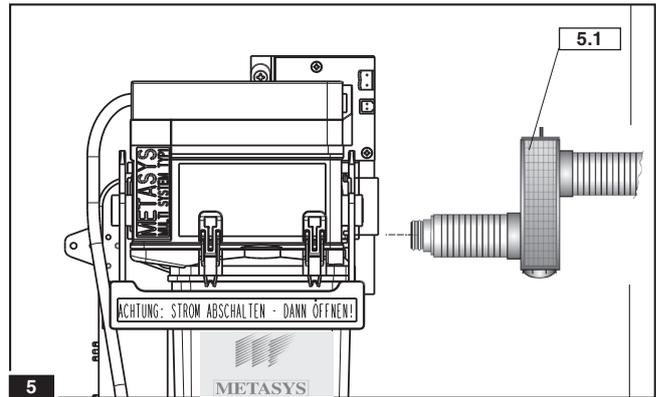
8 Electrical connections MST 1 ECO Light main board:

- 8.1** X1: Plug for power supply 24 V AC



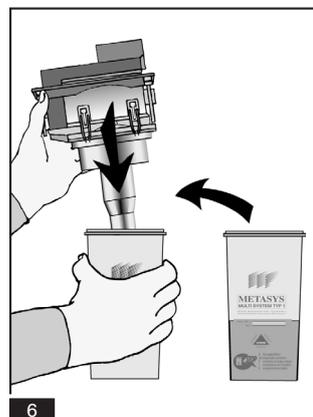
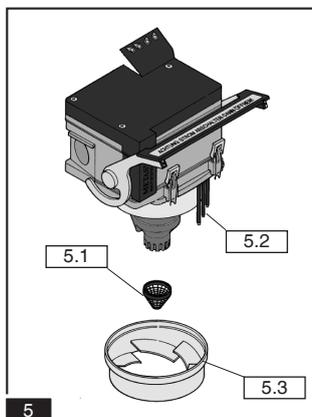
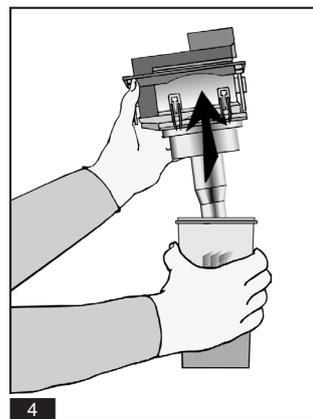
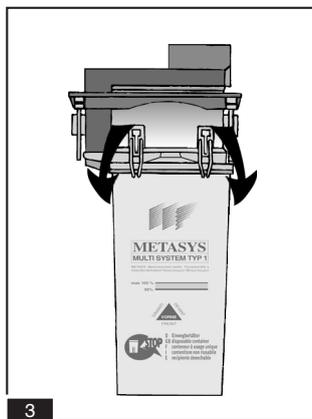
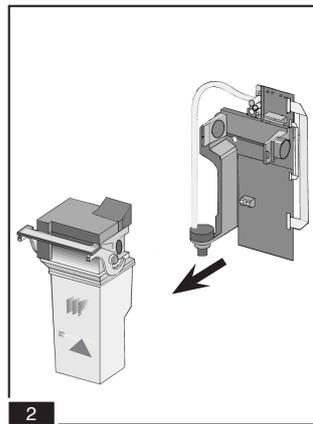
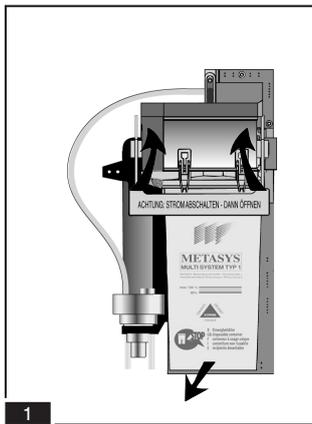
The supply voltage must be taken from a safety transformer which complies with the requirements as per IEC 601-1 / VDE 0750 Part 1 / DIN EN 60601-1 and IEC 60742 + A1 / DIN EN 60742.

- 8.2** X2: Plug for store signal
- 8.3** X1: Solenoid valve
- 8.4** X2: Pump
- 8.5** SV1: Plug for sensor module 2
- 8.6** Store signal
- 8.7** 24 V DC
- 8.8** Main fuse MST250/T 1,6 A/UN 250 V/ ICN 35 (must only be replaced by the same type!)



GB

Replacement of the collection container



12. Replacement of the collection container



**Switch off the main button of the unit!
Wear protective gloves!**

- Prepare a new collection container and take out the enclosed disinfectant bag.
- Remove the lid of the treatment unit.

- 1** Turn the locking bracket upwards.
- 2** Remove module 2 by pulling it forwards out of the unit and place it on a level, non-slip surface.
- 3** Open the four yellow clips on module 2.
- 4** Holding the collection container firmly, pull off the top.
- 5** If the pump filter **5.1** is soiled, remove it over a drip tray, clean it and replace it onto the end of the suction end of the pump housing. The probes **5.2** in module 2 can be cleaned with a soft cloth. The air brakes **5.3** can also be removed for careful cleaning.



Use the positioning markings when reassembling the apparatus (align arrow on the air brakes with notch on module 2).

- 6** Place the cleaned and correctly assembled module 2 onto a new collection container,



paying attention to the FRONT marking on the container.

- 7** Close the four yellow clips on module 2: Clean the seal on the supporting element with a soft cloth and grease with vaseline.
- 8** Carefully insert the automatic separator into its support and close the locking bracket.

- Turn on the main switch.

Disposal of the full collection container with DENTAL ECO SERVICE

13. Disposal of the full collection container:

 **Wear protective gloves and face mask!**
Avoid contact with the contents of the container!

For technical and hygienic reasons the collection container is designed for single use.

The reuse of a used container can lead to malfunctions and violates the warranty regulations!

The full amalgam separator can be disposed of at the in-house recycling company DENTAL ECO SERVICE - METASYS Group. Certificates of recycling need to be stored according to national law.

When the whole amalgam separator is dismantled at the end of its operational life, it must be returned to the manufacturer for its orderly disposal.

The simplest method of disposal: ECOTRANSFORM

9 See illustration:
Cut one end of the disinfectant bag enclosed with the new container and empty it into the full container for final disinfection.

10 See illustration:
Close the full container firmly using the green lid which is also provided with the new container.

11 See illustration:
Check that the eight safety catches on the lid have snapped into place.

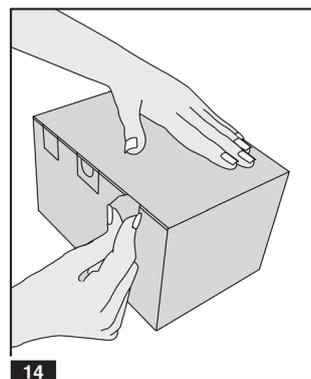
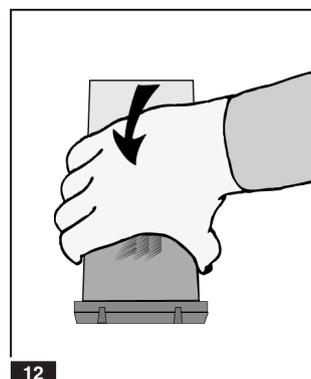
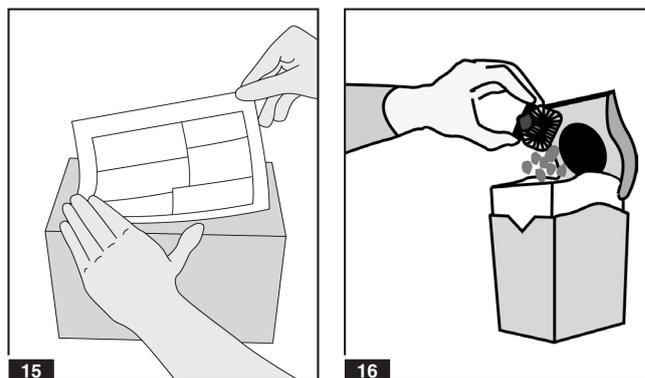
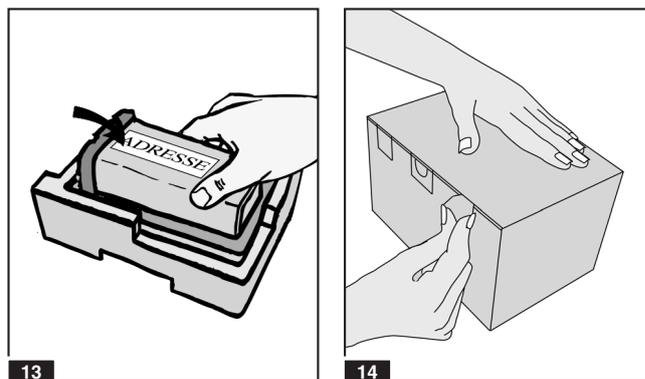
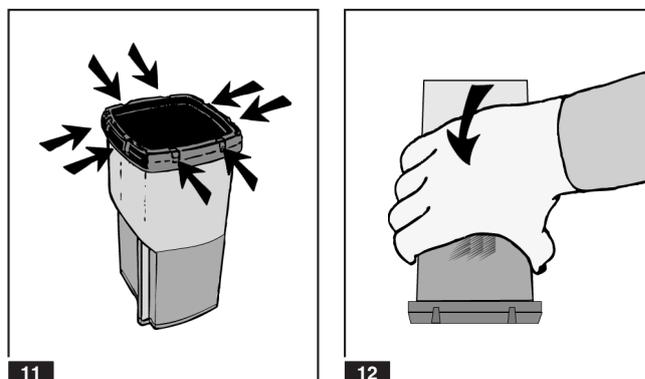
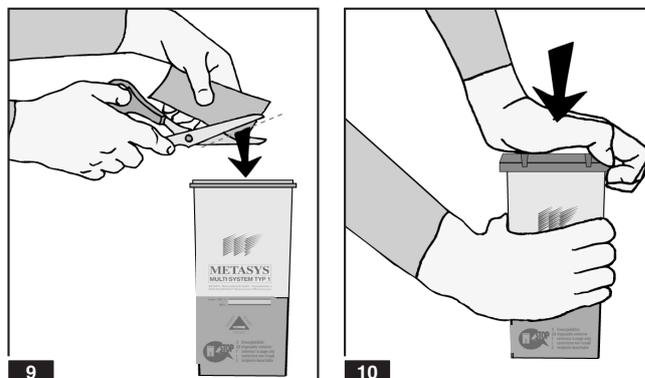
12 See illustration:
Perform a leak test by holding the closed container upside down over a collection cup to check that the lid is firmly closed.

13 See illustration:
Place the tightly closed collection container into the two half polystyrene shells of the transport carton.

14 See illustration:
Close the transport carton according to the enclosed handling instructions.

15 See illustration:
Place the appropriate return label onto the transport box for recycling at DENTAL ECO SERVICE (more information on recycling options in your country on: www.metasys.com).

16 See illustration:
Any amalgam residues from the prefilter must be collected in a suitable container (e.g. METASYS ECOCENTER) and disposed off properly with ECOTRANSFORM.



GB

Please go to
www.metasys.com
to locate your national collection point.

Maintenance, cleaning and disinfection with GREEN&CLEAN M2

14. Maintenance, cleaning and disinfection:

1 See illustration

Shortly flush spittoon bowl after each treatment!

2 See illustration

Suck some water through all suction hoses after every treatment.

3 See illustration

Twice a day, after having sucked off some water, use the disinfectant for amalgam separators GREEN&CLEAN M2.

Ideally a disinfection with GREEN&CLEAN M2 should be carried out before longer downtimes of the dental unit (e.g. lunch break, end of working days or holidays).

4 See illustration

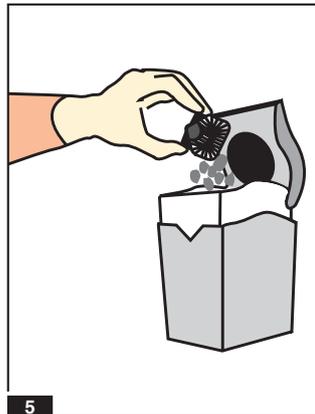
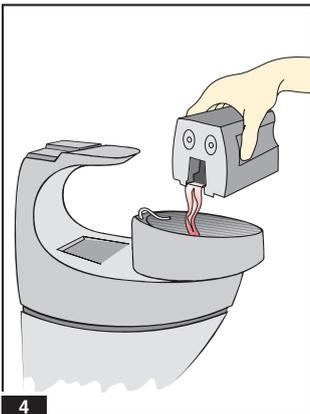
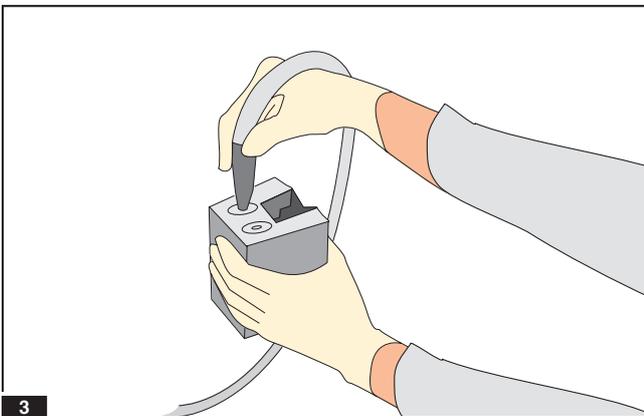
The spittoon bowl should also be rinsed with GREEN&CLEAN M2 twice a day.

Cleaning the prefilter:

- The prefilter must be emptied and cleaned at least once a week. This may also be carried out daily, depending on workload.

5 See illustration

Any residues from the prefilter, which might contain amalgam, must be collected in a suitable container (e.g. METASYS ECOCENTER) and disposed of properly with ECOTRANSFORM.





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