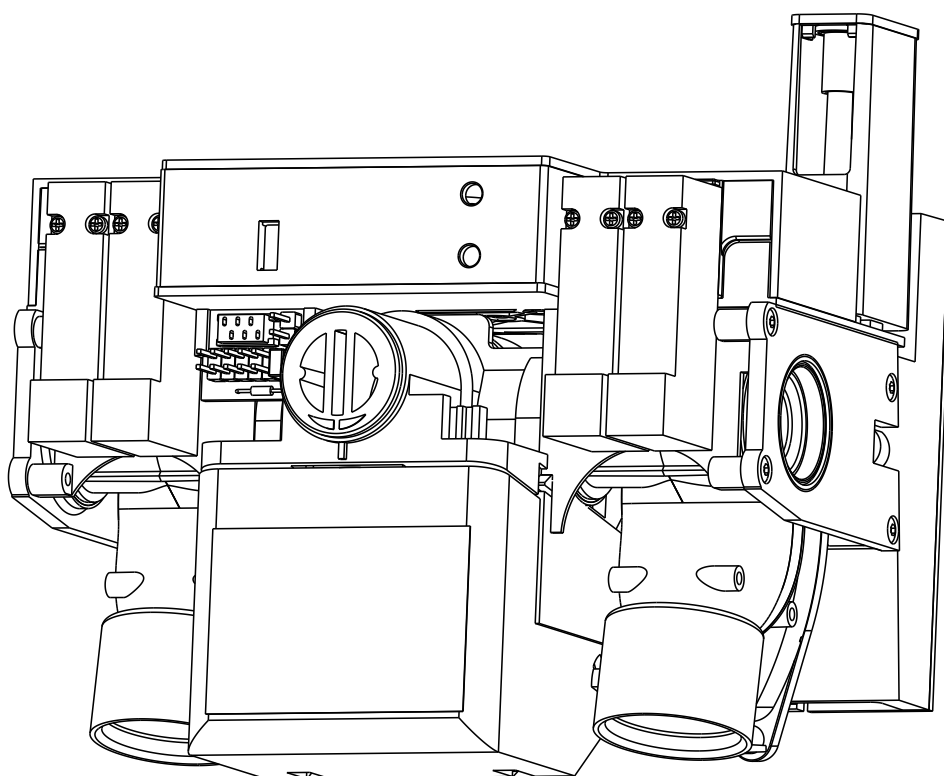


H1 HYGIENE SYSTEM

Instructions for use

EN | ZK-58.213/00 | 2022-12



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Translations

Translation of the original instructions for use



Tetras GmbH
Sirius Business Park, Rupert-Mayer-Str. 44, 81379 Munich, Germany

Images

The images contained in these instructions for use are for reference and may differ from the actual appearance of the product.

1. Notes







































1.1. General instructions







METASYS can only guarantee the safety, reliability and performance of the dental device if the following instructions are adhered to:

- > The product is only to be used in accordance with the instructions for use.
- > During maintenance and service work (inspection, service, repair, replacement), only use original replacement parts.
- > All manufacturer specifications for the treatment units to which the device is connected must be observed.
- > After commissioning, complete the proof of installation and send this to METASYS in order to define the warranty period.
- > All maintenance and service work must be entered into the device logbook.
- > On request by an authorised technician, METASYS will provide all documentation that may be of use to technically qualified personnel during maintenance and service works
- > METASYS accepts no responsibility for damage that may arise due to external influences (defective installation), using incorrect information, improper use of the dental device, or maintenance and service works being carried out improperly.
- > The user must familiarise himself/herself with how to operate the dental device and ensure that the dental device is in good condition each time before operating it.

Important: Read the accompanying documents of the device carefully before installation, commissioning and use and keep them for the entire service life of the product!

1.2. Explanation of the symbols

 CE mark	 End device ready for operation	 Use eye protection
 Medical device	 Loudspeaker	 Use mouth and nose protection
 Item number	 Sound	 Unplug from mains
 Serial number	 Inclination / slope	 General warning sign
 Manufacturer	 Maximum installation altitude	 Warning of electrical voltage
 Date of manufacture	 Blower / fan	 Information
 Follow instructions for use	 On Off	 Download
 Follow instructions for use with reference to eIFU	 Separate collection of electrical/electronic equipment (WEEE)	 Do not cut
 Temperature limit	 Protective earthing	 Maintenance / service
 Caution / attention	 Protection class II	 Stop operation
 Beware of electric shock	 Applied part type BF	 Protect from heat / Protect from sunlight
 Humidity limit	 Mark of conformity per para. 22 section 4 Lower Saxony Building Regs	 Protect from moisture / Store in a dry place
	 Responsible for the translation	 Fragile

	Tank filled		Observe instructions for use		Package orientation at the top
	Fault on end device		Use hand protection		Stacking limit n = (quantity)
CH REP	Name and address of the authorized representative's registered office in Switzerland				

1.3. Copyright notice

All names and contents are protected by copyright. Distribution, duplication or alternative use of this document is only permitted with the written consent of METASYS Medizintechnik.

2. Intended use

H1 Hygiene System doses software-controlled the GREEN&CLEAN H1 and water alternatively into the suction tubes of the dental treatment unit. Furthermore, the suction current will be released and interrupted with an integrated selective function.

2.1. Indication

Not applicable.

2.2. Contraindication

Not applicable.

2.3. Target group

The device shall be used by trained and qualified personnel exclusively.

3. Safety-related information

3.1. General safety-related information

All serious incidents related to the device must be reported to the manufacturer and the competent authority of the Member State where the user and/or the patient is resident.

3.2. Safety instructions

Assembly, modifications or repairs may only be carried out by authorised qualified personnel who guarantee compliance with the EN 60601-1 standard (international standard on Medical Electrical Equipment and Systems, in particular part 1: General requirements for basic safety).

The electrical installation must comply with the regulations of the IEC (International Electrotechnical Commission).

Medical devices should be handled with care with regard to electromagnetic compatibility. Special safety measures must therefore be taken.

The device is not suitable for operation in explosive areas or in flammable atmospheres.

3.3. Warnings

Danger	Warning of a danger that will directly result in serious injury or death
Warning	Warning of a danger that can result in serious injury or death
Caution	Warning of a danger that can result in minor injury
Attention	Warning of a danger that can result in extensive damage to property

4. Product description

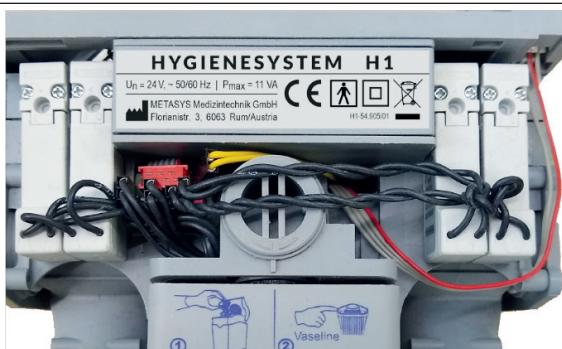
4.1. Product description

The H1 hygiene system offers automatic and continuous cleaning, disinfection, defoaming and deodorisation of the entire suction system during treatment, with integrated selective function of the vacuum hoses. In addition, the hose rack can be optionally retrofitted with 2 further mountings with freely selectable configuration.

4.2. Technical data / performance data

	H1 Hygiene System
Power supply	24 V AC
Frequency	50/60 Hz
Max. current consumption	450 mA
Max. power consumption	11 VA
Max. ambient temperature	40°C
Permissible water pressure	2-4 bar (operating pressure: 2 bar)
Weight x	2,45 kg
Dimensions (H x W x D)	128 x 132 x 95 mm (without housing and hose tray)
Space requirement for installation (H x W x D)	180 x 260 x 110 mm (without housing and hose tray)
Class	MD class 1
Water connection	PU hose, nominal width 2 mm, outside Ø 4 mm

4.3. Type plate



The type plate is located on the front of the housing. The serial number and date of manufacture as well as other device-related information are on a separate label on the side of the housing.

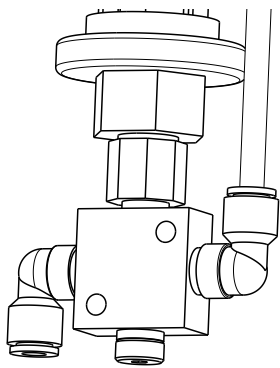
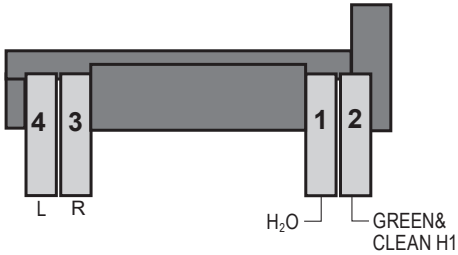
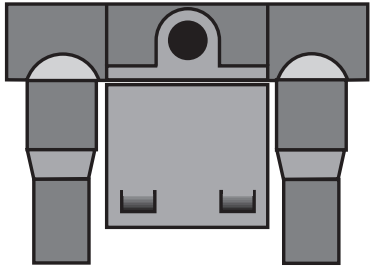
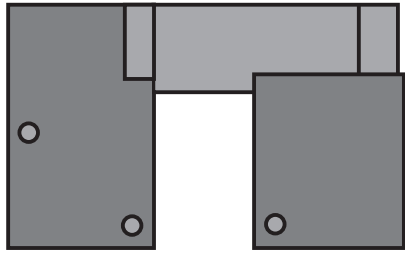
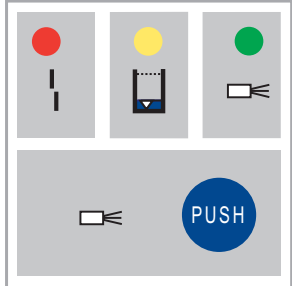
<p>3 1</p> <p>11 — REF 05010035 — 9</p> <p>10 — MD SN EH-123456 — 8</p>	<p>1 Device description</p> <p>2 Manufacturer</p> <p>3 Connection data</p> <p>4 Protection class II II</p> <p>5 Applied part type BF</p> <p>6 Separate collection of electrical/electronic equipment (WEEE)</p> <p>7 CE mark</p> <p>8 Serial number</p> <p>9 Date of manufacture</p> <p>10 Medical device</p> <p>11 Item number</p>
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Example picture



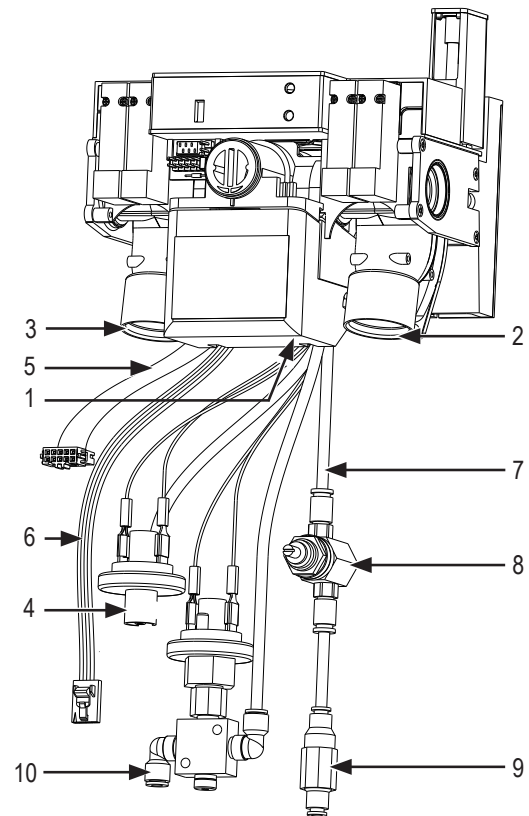
12 Name and address of the authorized representative's registered office in Switzerland

4.4. Construction

<p>Module 1</p>	<p>Connection to the GREEN&CLEAN H1 pouch</p>	
<p>Module 2</p>	<p>H1 valve block, double membrane pump & DVGW vessel The valve block in combination with the double membrane pump forms the “heart” of the H1 hygiene system. It is responsible for determining the disinfectant/water ratio, transporting the cleaning medium to the respective handpiece and for the control unit of the knee closures. In order to prevent any backflow of process water into the drinking water network, the fresh water is taken from a container with free outlet (per DVGW).</p>	
<p>Module 3</p>	<p>Filter housing, angle closures & suction hoses The filter housing contains the filter rake, which can be removed without dripping. The knee closure (1 each per vacuum hose) serve as a closure for the suction flow and interrupt the disinfectant transport when the negative pressure drops. They are hooked in so they can be rotated and form the mounting for the vacuum hoses, which are fitted with a thin inner hose that guides the disinfectant to the handpiece. The suction flow rate can also be adjusted on the filter housing by means of a regulator.</p>	
<p>Module 4</p>	<p>Electronics board & board housing The PCB housing is used for protected mounting of the electronics board. This forms the central control unit of the hygiene system.</p>	
<p>Module 5</p>	<p>Control panel The clearly arranged control panel displays the most important operating states, can be fitted anywhere or is part of the METASYS hose rack.</p>	

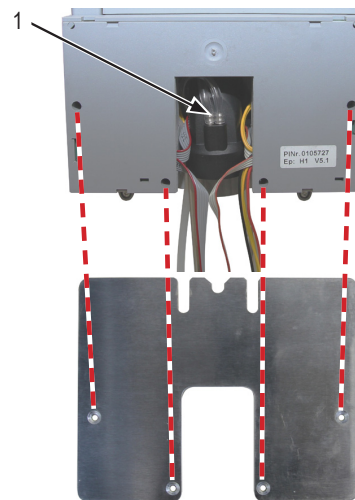
4.5. Connections

- 1 Suction line
- 2 Suction hose 1
- 3 Suction hose 2
- 4 Vacuum switch
- 5 Connection cable (4- and 6-pole), control unit, deposit signal)
- 6 Power supply 24 V AC (red/black), start signal for suction system (yellow)
- 7 Water supply line PU hose, nominal diameter Ø 2 mm, outside Ø 4 mm
- 8 Pressure regulator
- 9 Water filter
- 10 Connection H1 pouch



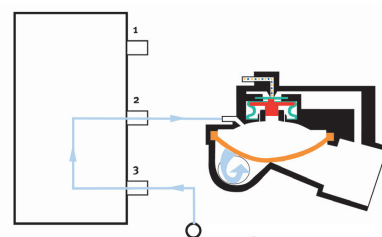
4.6. Holder

- 1 Connection suction line

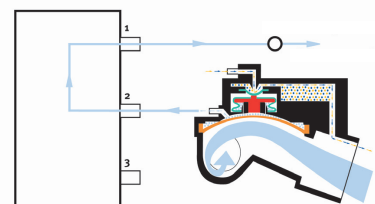


4.7. Functional description

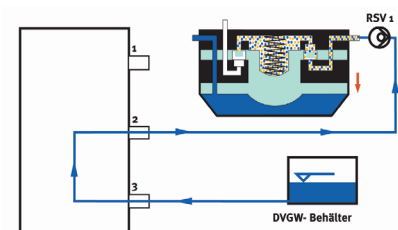
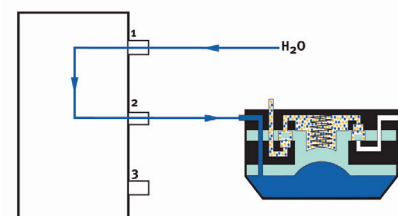
- 1 When the handpiece of a vacuum hose is lifted, the respective suction flow closure membrane is opened by negative pressure through one solenoid valve each (L = left / R = right).



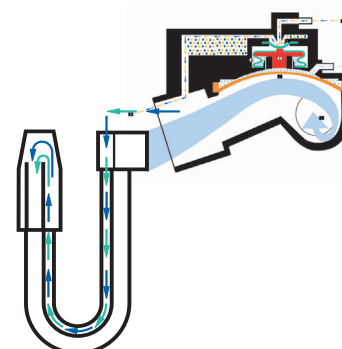
- 2 The suction flow seal is designed as a pipe elbow and is highly streamlined and is also insensitive to contaminants. The cleaning cycles start at the same time as the suction process.



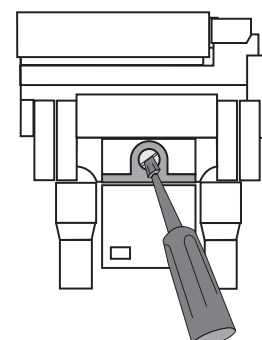
- 3 Water is drawn out of the DVGW container, or GREEN&CLEAN H1 disinfectant is drawn out of the pouch by means of a water pressure-driven double membrane pump.



- 4 Once drawn off, the disinfectant is pumped through the knee sealing membrane and through lines in the suction hoses to the handpiece in use. The suction flow distributes the disinfectant evenly over the inner walls of the vacuum hoses, thus ensuring optimum cleaning and disinfection of the entire suction system.

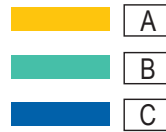


- 5 The suction air volume can be adjusted by means of the regulator above the filter cup. A coin or screwdriver, for example, can be used for adjustment. Please observe the markings on the suction air regulator.

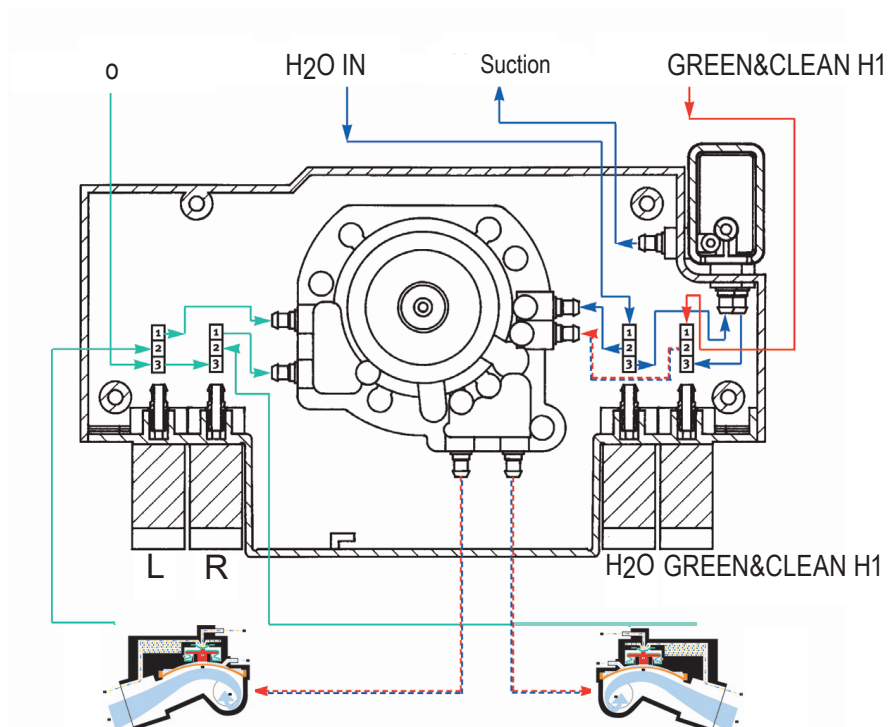
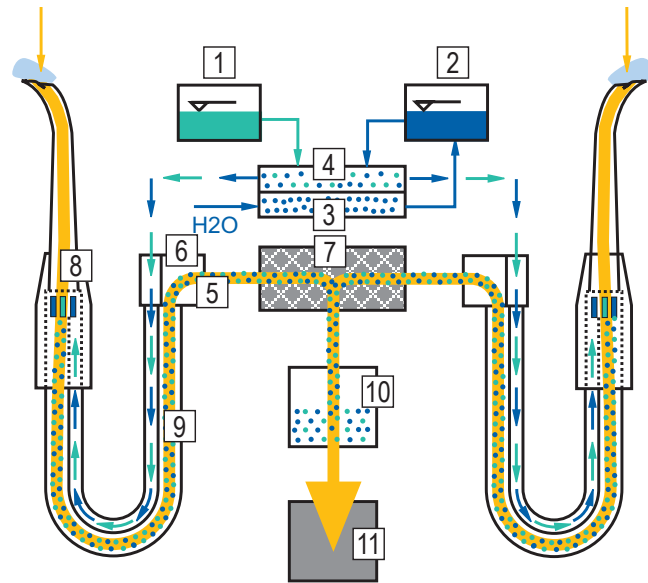


4.7.1. Functional diagram

- A Suction flow
- B GREEN&CLEAN H1
- C Water





- 1 H1 pouch
- 2 DVGW tank (water)
- 3 Double membrane pump
- 4 Pump chamber
- 5 Knee closure diaphragm
- 6 Chemical seal
- 7 Filter housing
- 8 Handpieces
- 9 Suction hose with inner tube
- 10 Amalgam separator or automatic separator
- 11 Suction system






5. Preparation for use

5.1. Transport and storage

The device is shipped in a cardboard box with bubble wrap. This original packaging must be used for any onward and return transport. The device must always be transported and stored in an upright position. The device must be transported to the installation site in a completely packed state. After unpacking the device, check for completeness and possible transport damage.

	Transport and storage temperature	0 °C – 70 °C
	Transport and storage humidity limitation	max. 80%

5.2. Installation requirements

	Operating temperature	10 °C – 40 °C
	Humidity limit	max. 70%
	above sea level	≤ 3000 m

- > A water filter (40 µm) and a pressure regulator (2 bar) must be attached to the water supply line (included in the scope of delivery).
- > The vacuum must not exceed 250 mbar (at the cannula).
- > Only 24 V AC must be connected to terminal X2 as the supply voltage.
- > The regulations of the device manufacturer must be observed.

5.2.1. Assembly variants

Due to its modular design, the H1 hygiene system can be installed directly in the treatment unit. If direct installation is not possible, it can also be installed in an auxiliary housing.

5.2.2. Pipe and hose connections

Can only be used with original METASYS suction hoses:

- > large suction hose: diameter 17.5 mm
- > small suction hose: diameter 11 mm

5.2.3. Filter

Since the H1 hygiene system has its own filter, no additional pre-filter is required.

5.3. Installation, assembly and commissioning



Read the instructions carefully before installation and commissioning!

Meet spatial requirements see 4.3. Technical data

- 1 Connect the suction line
- 2 Connect the suction hoses
- 3 Connect the water supply line
- 4 Connect the GREEN&CLEAN H1 pouch
- 5 Connect the electrical connections (see Electronics)
- 6 Switch on the unit via the practice main switch. The unit runs through the intensive cleaning program first on the left and then on the right suction hose as seen from the unit (cleaning of the system and self-test). During this process, the right LED flashes green.
- 7 When the right LED continuously lights up green, the H1 hygiene system is ready for operation (description of the external display).
- 8 Inform the dentist about product function, operation, care and warranty conditions.
- 9 Fill in the installation proof and device logbook and return them to METASYS (installation@metasys.com)

5.3.1. Installation and assembly of optional accessories, retrofit parts and spare parts



Assembly, modifications and repairs may only be carried out exclusively by authorised specialist personnel (see 3.2. Safety instructions)! The METASYS technical customer service is also available for further information and assistance in carrying out repairs, retrofitting, fault analyses, etc.

5.3.2. Connecting to other devices

When connecting the METASYS device to other devices or systems, hazards can arise. It must therefore be ensured that no hazards arise for the user or the patient and that the environment is not affected. The specifications of the manufacturer of the device or system to be connected must be observed.

5.4. Electronics

The mains connection may only be carried out by a qualified electrician. The electrical installation must be carried out in accordance with the applicable local regulations. Before connecting to the mains, compare the rated voltage on the device type plate with the mains voltage.



Danger:

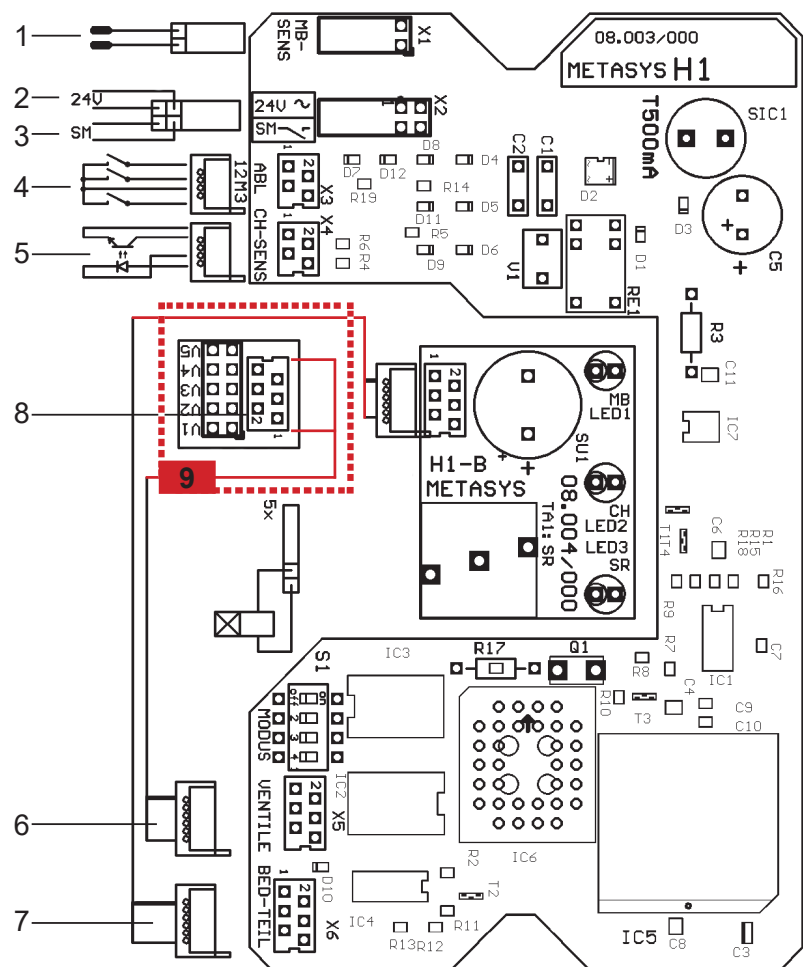
The supply voltage must be taken from a safety transformer which complies with the requirements according to IEC 601-1 / VDE 0750 part 1 or DIN VDE 0551. If this output contact X2 is to be used to switch parts which are not of type BF, these must be controlled via an isolating relay which complies with the requirements according to IEC 601-1, section 20.2, insulation B-a. This isolating relay is switched on via output contact X2, using the same operating voltage as H1.

Danger:

Fuses may only be replaced by the same type!

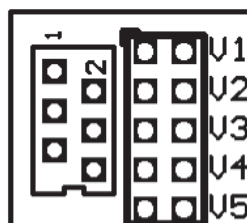
5.4.1. Main board

- 1 Sensor membrane rupture (X1 - MB- SENS)
- 2 Power supply 24 V ~ (X2 - 24V ~)
- 3 Start suction machine (X2 - SM)
- 4 Tray 1, 2 and 3 (X3 - ABL)
- 5 Sensor chemical tank (X4 - CH- SENS)
- 6 Valves V1 - V5 (X5 - VENTILE), 6-pole
- 7 Control unit (X6 - BED- TEIL)
- 8 Vacuum switch
- 9 Transfer board (see 5.4.2)



5.4.2. Transfer board (see 5.4.2)

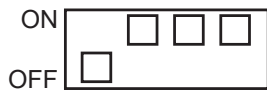
- V1 H2O
- V2 GREEN&CLEAN H1
- V3 Knee valve right
- V4 Knee valve left
- V5 additional valve for third suction hose



5.4.3. H1 mode setting

Standard

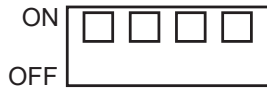
1 - two suction hoses



1

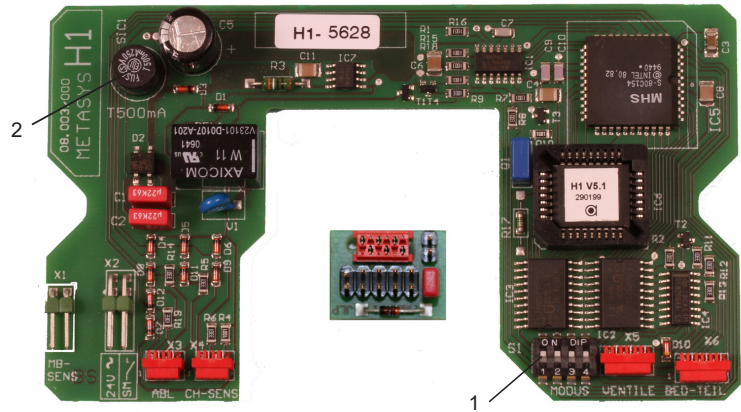
3 suction hoses

0 - three suction hoses



2

SIC1. Fuse (750m A/T; soldered in)



6. Use

6.1. Cleaning cycles

6.1.1. Initial cleaning

The initial cleaning at the beginning of each treatment section. This program is activated by switching on the main switch of the treatment center. It creates ideal starting conditions in terms of defoaming and blood solution for the upcoming treatments by increasing the disinfectant dosage.

External display	Water + GREEN&CLEAN H1 cycle	Program duration
green slowly flashing (approx. 3 seconds)	10 / 2 / 10 per suction hose (=10 parts water / 2 parts GREEN&CLEAN H1 / 10 parts water)	1 minute 5 seconds per suction hose

6.1.2. Normal operation

Normal operation takes place with the suction hose lifted off. This water+GREEN&CLEAN H1 cycle is stopped when the suction operation is interrupted and resumed when the suction operation is resumed.

External display	Water + GREEN&CLEAN H1 cycle	Program duration
green light, when suction hose is lifted off	1 / 413 / 1 per suction hose (=1 part GREEN&CLEAN H1 + 413 parts water + 1 part GREEN&CLEAN H1)	Permanent with suction hose lifted off

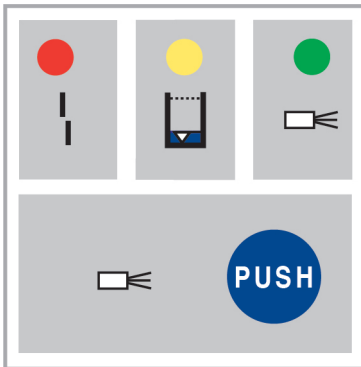
6.1.3. Special cleaning

The special cleaning program is started by pressing the corresponding key on the external display. This program should be used at the end of each treatment day and after particularly heavy loading of the suction system (such as after longer surgical procedures).

External display	Water + GREEN&CLEAN H1 cycle	Program duration
green fast flashing	40 / 4 / 8 per suction hose (=40 parts water - 4 parts GREEN&CLEAN H1 - 8 parts water)	2 minutes 35 seconds per suction hose

This particularly intensive cleaning flushes out any residual deposits from the suction system. Complications during longer periods of system standstill (such as during the night or a vacation) are avoided. A final disinfection is guaranteed. During program sequences, the hygiene system controls the suction machine, i.e. the suction hoses must remain hooked in.

6.2. External display



1	LED 1 red/fault	red flashing and 5 beeps when malfunction occurs; further short beep each time suction hoses are lifted, red flashing signal remains	Membrane rupture; suction works, but no cleaning and disinfection
		red flickering without signal	Press PUSH key once; if it does not work, there is an electrical fault: Check electronics!
2	LED 2 yellow/empty message	yellow glowing and beeping once every time the suction hoses are lifted off the unit	Replace the GREEN&CLEAN H1 pouch!
3	LED 3 green/program run	green glowing, suction hose attached	Ready for operation
		green glowing, suction hose removed	permanent cleaning in operation
		green slowly flashing (approx. 3 seconds)	Sequence of initial cleaning program
		green flashing quickly (approx. 1 second)	Sequence of special cleaning program
4	PUSH	no color	Start button Special cleaning program: Activation by pressing the „PUSH“ key once.

6.3. Error messages



Assembly, modifications and repairs may only be carried out exclusively by authorised specialist personnel (see 3.2. Safety instructions)! For further information and assistance in carrying out repairs, retrofitting, fault analyses, etc., the METASYS technical customer service is also available!

Error message	Possible cause	Countermeasures
Membrane rupture no rinsing of the suction hoses + red LED red LED (=signal for membrane rupture) flashes permanently no rinsing of the suction hoses 5 x beeps each time the main switch is switched on 1 x beep when lifting the suction hose no RESET possible	Moisture on the electrical interface of the H1	Disconnect connectors at ribbon cable and plug and dry with air
	Moisture on the main board	Remove main board and dry Dry all plug connections
	Moisture on the membrane rupture sensor in the valve block (without water escaping from the membrane)	Remove cartridge Loosen screws from adapter plate and lift up adapter plate Dry sensor area (contact rods with yellow cables)
	Membrane rupture	Apply repair kit #50010053 Replace by exchange unit
No rinsing of the suction hoses + Green LED LED 1 lights up green (=normal operation)	Water filter dirty	Clean or replace water filter
	Pressure regulator dirty	Replace pressure regulator
	Vacuum switch defective or not connected to service board	Unplug vacuum switch connector and connect together; if H1 does not start pumping, then: Replace vacuum switch
	Control air hose has come loose from the vacuum switch	Reconnect control air hose to vacuum switch If necessary, secure with cable tie
	Solenoid valve V1 stuck in closed state	Relieve the water pressure in the treatment center
	Solenoid valve V2 clogged due to contamination in the DVGW line	Replace solenoid valve V1 or V2 Check water filter
	Inner hoses of the suction hoses are clogged	Remove suction hoses from knee closure Blow through inner hoses Replace suction hoses if necessary
Passage at knee cover clogged with lime or dirt (especially after longer periods of inactivity)	Replace knee closure	
Initial cleaning does not work / cannot be switched off Normal cleaning cycle/suction hose: 10 cycles water 2 cycles chemical product 10 cycles water	EPROM without initial cleaning (H2)	Check plug connection
	Cartridge empty/indicator yellow	Filling the cartridge
Special cleaning does not work / cannot be switched off Normal cleaning cycle/suction hose: 40 cycles water 4 cycles chemical product 8 cycles water	Button plugged in/continuously pressed	Check button
	Plug connection disconnected/external display	Check plug connection
Knee joint is leaking	Blockage/contamination in knee closure	Replace knee lock

Error message	Possible cause	Countermeasures
Suction cannot be switched off	Moisture on optocoupler board in wiring harness	Dry optocoupler board with air Replace wiring harness if necessary
	Switch on tray defective	Check switch and replace if necessary / Light barriers + microswitch
	Relay on main board defective	Replace main board
Suction is not controlled	Switch on tray defective	Check switch and replace if necessary / Light barriers + microswitch
	Relay on main board defective	Replace main board
Generally too little suction flow	Suction system leaking (e.g. jammed secondary air line)	Eliminate leaks in the suction system
	Filter dirty	Check and clean filter, replace if necessary
	Suction hose defective, damaged or dirty	Check suction hose and replace if necessary
	Adjusted suction air regulator	Check suction air regulator
Suction flow is not released or only released with delay	Selective valve V3 or V4 is stuck	Replace selective valve V3 or V4
	Plug connection V3 or V4 on the service board loose or oxidized	Check plug connections of valve board
	Knee center part leaking	Replace valve board if necessary
	Diaphragm in knee closure hardened	Replace knee cap: # 50010005 Replace diaphragm: Repair kit # 50010032
	Vacuum hoses of external suction air control kinked	Remove kink check for damage!
No or very little chemical consumption	Solenoid valve V2 is stuck or clogged	In general: Check whether suction is possible directly from the GREEN&CLEAN H1 pouch!
		Loosen solenoid valve V2 from the valve block Remove GREEN&CLEAN H1 pouch Blow through connection between tank nozzle and valve seat Replace solenoid valve
	Water pressure too low	Check water filter and pressure regulator for contamination Clean water filter, replace if necessary Replace pressure regulator
Water leaks from the DVGW tank when the suction hose is hooked in	Solenoid valve V1 stuck in open position	Relieve the water pressure in the treatment center
	Solenoid valve V1 leaking due to contamination	Replace solenoid valve V1
Water leaking from the DVGW tank with the suction hose removed	Drain of the DVGW tank is clogged	Remove blockage
Short circuit/solenoid valve Signal: Red LED red LED (=signal membrane rupture) flashes very fast no beep RESET possible/PUSH Red LED permanent	Moisture on the service board at the H1 front (slot of the solenoid valves)	Disconnect all plugs on the service board
	Diode on the service board defective - short circuit! Defective component on the board - short circuit!	Dry plugs and board
	Defective component on the board - short circuit!	Replace service board
	Short circuit at the socket connector of the solenoid valve	Replace main board
Red LED permanent	Short circuit main board	Check connector

7. Care and maintenance

7.1. Regular cleaning measures

The following cleaning measures must be carried out regularly:

Measure	Interval	
Cleaning of the filter rake	daily	See 7.1.1
Cleaning and disinfection of METASYS handpieces	daily	See 7.1.2
Cleaning and disinfection of the pre-filter	daily	Remove, empty and clean the filter drawer. Collect the residues containing amalgam from the filter drawer in a suitable container.
Cleaning and disinfection of the suction hoses	daily	The complete suction hoses can be disinfected with non-alcoholic surface disinfectants (e.g. GREEN&CLEAN MK or GREEN&CLEAN SK) (wipe disinfection). Cleaning of the suction hoses under running water is possible.
Cleaning the spittoon	daily	We recommend GREEN&CLEAN MB for cleaning the spittoon. For information on use and safety instructions, see the GREEN&CLEAN MB operating instructions. Do not use household cleaners, as they may cause the suction system to malfunction!
Maintenance kit H1 hygiene system	1 x per year	See 7.2
Replacing the GREEN&CLEAN H1 pouch	If required	See 7.3.1

7.1.1. Daily cleaning of the filter rake



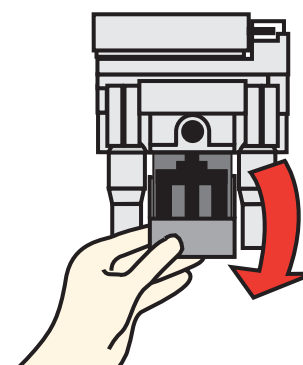
Warning

Use hand protection

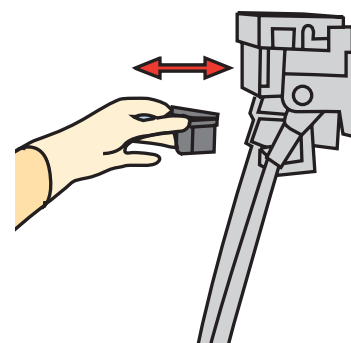


It is recommended to replace the filter rake every 2 to 3 months. The filter rake must always be inserted and the cup clip closed when operating the suction system. If the suction performance decreases, the filter rake must be checked for dirt.

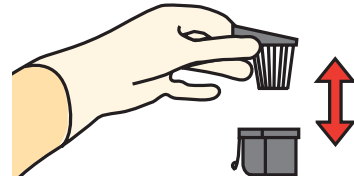
- 1 Turn the cup clip of the H1 hygiene system downward.



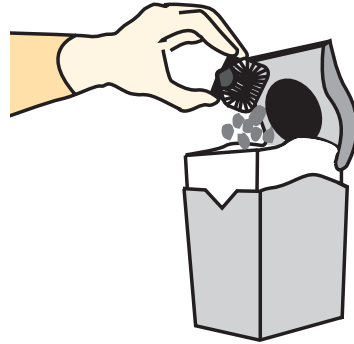
- 2 Pull out the filter cup horizontally.



3 Remove the filter rake by pulling it upwards.



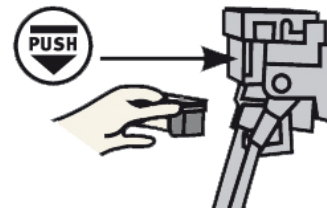
4 Empty the amalgam residue into the container provided (e.g. METASYS ECO CENTER).



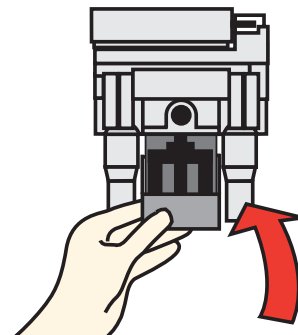
5 Clean or replace the filter rake and grease the sealing lip, clean the underside of the housing if necessary.



6 Insert the filter cup with the inserted filter rake horizontally into the previously cleaned housing.



7 Turn the cup clip upwards and snap it into place.



7.1.2. Cleaning and disinfection of METASYS handpieces

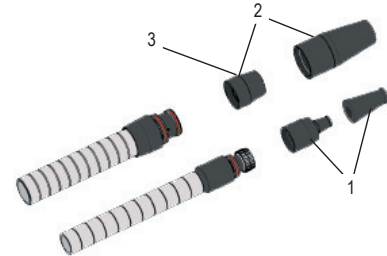


Use hand protection!

Disassemble handpieces: Switch off the workstation and carefully pull the handpieces off the connector on the hose with a twisting motion. When reassembling, ensure that the O-rings are correctly seated and greased and push the handpieces on with a twisting motion. Grease the O-rings with Vaseline after cleaning!

1

- 1 - Handpiece small
- 2 - Handpiece large
- 3 - Manifold large



- 2 For handpieces from other manufacturers, observe the manufacturer's specifications!

7.2. Maintenance and service



Assembly, modifications and repairs may only be carried out exclusively by authorised specialist personnel (see 3.2. Safety instructions)! For further information and assistance in carrying out repairs, retrofitting, fault analyses, etc., the METASYS technical customer service is also available!

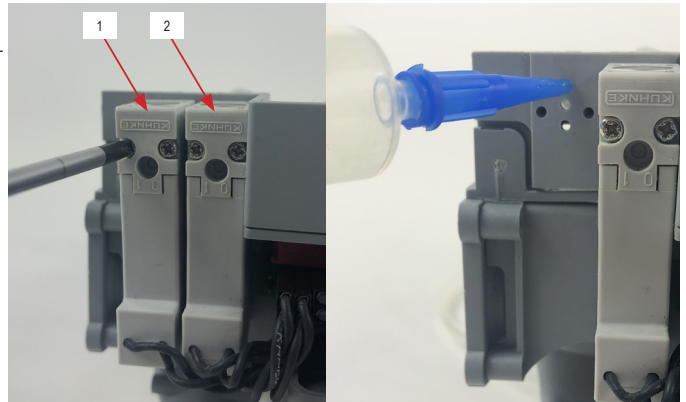
7.3. Maintenance kit H1 hygiene system

7.3.1. Exchange of valves and cleaning of lines

Unscrew all 4 valves (2x left, 2x right)

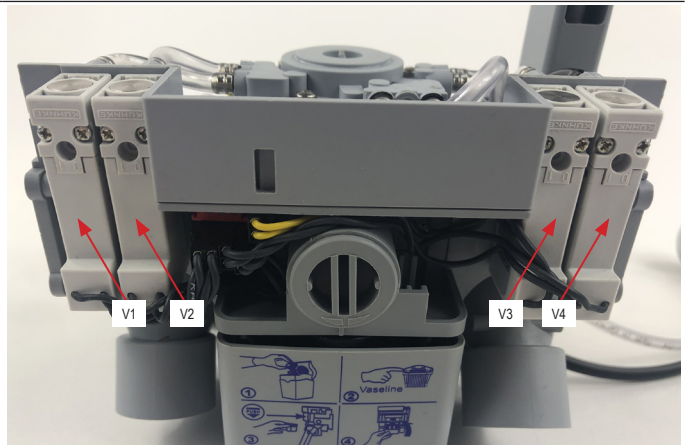
1

Clean lines of all 4 valves with syringe (not included)



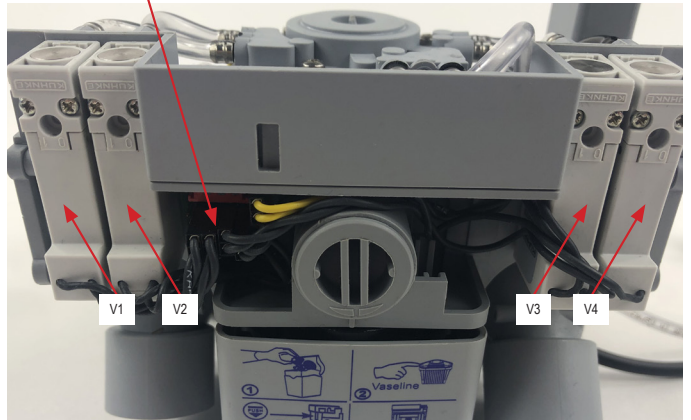
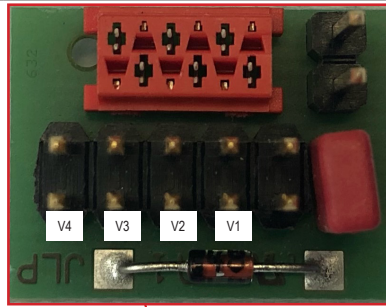
2

Mount new valves.



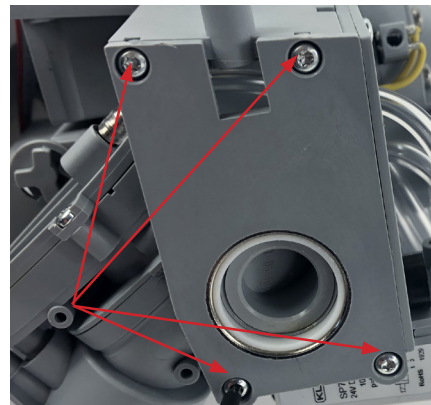
Reconnect valves:

- V1 - water
- 3** V2 - GREEN&CLEAN H1
- V3 - Knee valve, right
- V4 - Knee valve, left



7.3.2. Diaphragm and cover exchange knee valve

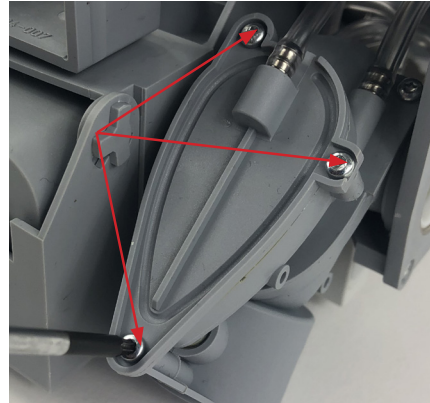
- 1** Disassemble and remove side plate (loosen 4x screws)



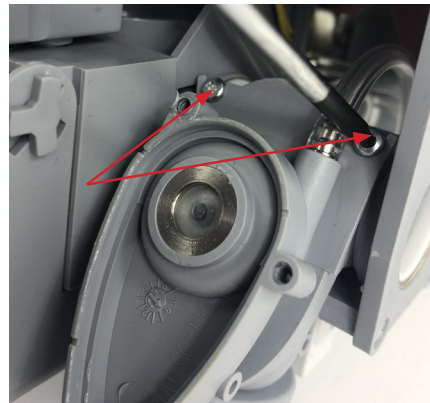
- 2** Remove knee valve



- 3 Dismantle sealing cover (3x screws loosen)



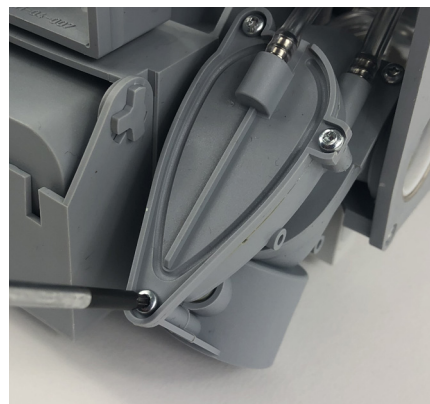
- 4 Dismantle sealing part (2x screws loosen)



- 5 Replace diaphragm

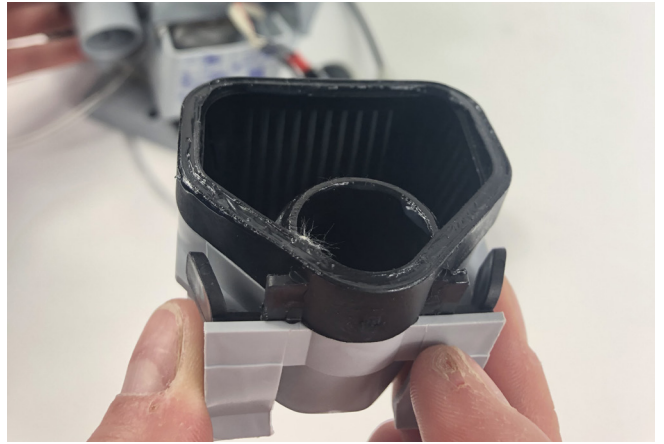


- 6 Replace and mount sealing cover and middle part

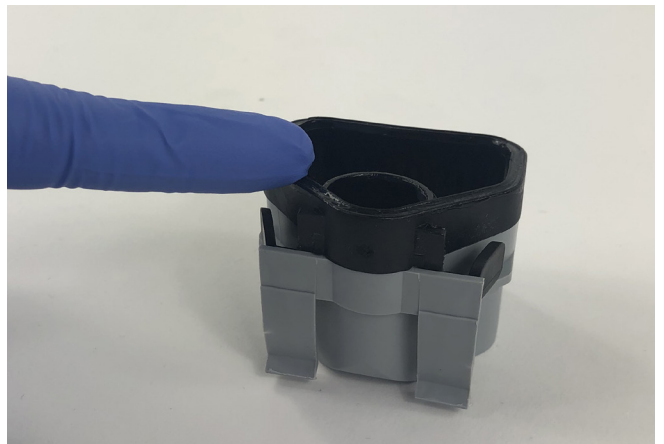


7.3.3. Greasing the filter rake and replacing cover of knee valve

- 1 Disassemble and remove side plate (loosen 4x screws)



- 2 Take out knee valve



7.4. Replacement of consumables

7.4.1. Replacing the GREEN&CLEAN H1 pouch

When the GREEN&CLEAN H1 pouch is empty (on average after approx. 23 days, depending on the mode of operation), it must be replaced. For information regarding GREEN&CLEAN H1, refer to the GREEN&CLEAN H1 Instructions for Use.

8. Decommissioning

8.1. Disassembly



Warning:

Remove from power source before disassembly!



Warning:

Risk of contamination: To avoid infection, wear personal protective equipment (hand, eye, nose and mouth protection) and disinfect and clean the device!

If it is necessary to return the device to the depot or to METASYS, the original METASYS packaging must be used. Before packing the METASYS device to be transported, clean and disinfect it. Possible openings where residual fluids could escape must be closed.

8.2. Recycling and disposal



The device may be contaminated! Advise the disposal company of this so that appropriate precautions can be taken. Parts that are contaminated with amalgam, such as sieves, filters, hoses, etc., must also be disposed of in accordance with the national regulations.

Untampered plastic parts of the device can be recycled as normal plastics. The integrated electronic components (including circuit board) are to be disposed of as electronic waste. Metal parts are to be disposed of as scrap metal.

Alternatively, the device can be returned to the manufacturer for proper disposal. Before packing the METASYS device to be transported, clean and disinfect it. Possible openings where residual fluids could escape must be closed. The original METASYS packaging must be used for shipping.

The proof of installation and the device logbook must be kept for 5 years after the device has been disposed of.

9. Annex

9.1. Order numbers and scope of delivery

Order number	Designation	Scope of delivery
05010005	H1 hygiene system, standard without tray - Ultradent	Device with Ultradent accessories and instructions for use
05010007	H1 hygiene system, standard without tray - Ultradent, chemical	Device with Ultradent accessories and instructions for use
05010008	H1 hygiene system, standard without tray - Ultradent, water	Device with Ultradent accessories and instructions for use
05010035	H1 / pouch version with 1 suction hose each, 11/17.5 mm, L=1600 mm	Device with standard accessories and instructions for use
05010038	H1 hygiene system, standard without tray - Swident	Device with Swident accessories and instructions for use
05010044	H1 hygiene system, standard without tray - Novadent, without housing, triple elbow closure pieces	Device with Novadent accessories and instructions for use
05010054	H1 hygiene system, standard without tray - OMS, pouch version	Device with OMS accessories and instructions for use
05010055	H1 hygiene system, standard without tray - Novadent, double elbow closure pieces	Device with Novadent accessories and instructions for use

9.1.1. Accessories, service kits and spare parts

Service kits

Order number	Designation
50010062	H1 inspection kit

Disinfectant

Order number	Designation
60010201	Refill set (4 x 500 ml pouches)

Spare parts

Order number	Designation
50010002	Slotted lever for adapter plate H1, 10 pieces
50010003	Pressure switch, for H1
50010005	Place selection valve closure, for H1
50010006	DVGW container, for H1
50010007	H1 cartridge, unfilled
50010008	Filter cup, for H1, 5 pieces
50010009	Electronic main board, for H1
50010010	Control panel, for H1
50010011	Adapter plate, for H1
50010013	Line filter, for 2 x 4 mm tubing
50010021	Guide block, for H1- cartridge
50010026	Eprom for H1

Order number	Designation
50010028	Cup Clip, for H1
50010029	Place selection valve seal, for selective system
50010032	Repair Kit place selection valve H1
50010033	Refill adapter H1 cartridge
50010040	Service board H1
50010046	Pressure regulator, for H1
50010047	Handpiece small, for H1 / S1
50010048	Handpiece large, for H1 / S1
50010053	Repair kit H1 double membrane pump
50010057	H1 spout adapter HEKA pouch
50030005	Covers / housings S1, H1
55010001	Filter rake, for H1

Suction hoses

Order number	Designation
55100001	H1 suction hose, Ø 11 mm / 1490 mm / standard
55100002	H1 suction hose, Ø 11 mm / 1770 mm / Ritter
55100003	H1 suction hose, Ø 11 mm / 1690 mm / Finndent
55100004	H1 suction hose, Ø 17.5 mm / 1490 mm / Standard
55100005	H1 suction hose, Ø 17.5 mm / 1650 mm / Ritter without handpiece
55100006	H1 suction hose, Ø 17.5 mm / 1690 mm / Ultradent / Finndent

Order number	Designation
55100031	H1 suction hose, Ø 11 mm / 1690 mm for Cattani tray
55100032	H1 suction hose, Ø 17.5 mm / 1690 mm for Cattani tray
55100035	H1 suction hose, Ø 11 mm / 1690 mm / Novadent
55100036	H1 suction hose, Ø 17.5 mm / 1690 mm / Novadent
55100039	H1 suction hose, Ø 11 mm / 1400 mm for Cattani tray
55100040	H1 suction hose, Ø 17.5 mm / 1400 mm for Cattani tray

Order number	Designation
55100007	H1 suction hose, Ø 11 mm / 1290 mm / Ultradent
55100008	H1 suction hose, Ø 17.5 mm / 1290 mm / Ultradent
55100010	H1 suction hose, Ø 17.5 mm / 2650 mm / Ritter
55100011	H1 suction hose, Ø 11 mm / 1690 mm / Ultradent
55100020	H1 suction hose, Ø 11 mm / 1810 mm / Chirana
55100021	H1 suction hose, Ø 17.5 mm / 1810 mm / Chirana
55100022	H1 suction hose, Ø 11 mm / 1490 mm / Handpiece long

Tube nozzles and adapters

Order number	Designation
40010001	Tube nozzle 15-16 mm, 5 pcs.
40010002	Tube nozzle, 18-19 mm, 5 pcs.
40010003	Tube nozzle, 19-20 mm, 5 pcs.
40010004	Tube nozzle, 21-22 mm, 5 pcs.
40010005	Tube nozzle, 24-25 mm, 5 pcs.
40010006	Tube nozzle, 31-32 mm, 5 pcs.
40010007	Tube nozzle, 13 mm, 5 pcs.
40010008	Tube nozzle, 15 mm, 5 pcs.
40010009	Tube nozzle, 15 mm, 90°, 5 pcs.
40010012	Angle-piece water outlet, 15 mm
40010015	Double nozzle, 22-25 mm
40010017	Extension air duct, 72.5 mm
40010018	Extension air duct, 64.5 mm
40010019	Extension air duct, 56.5 mm
40010022	Extension air duct, 49.5 mm
40010023	Adapter, 26 mm
40010024	Adapter, 21- 22 mm, 5 pcs.
40010026	Adapter, 31-32 mm, 5 pcs.
40010029	Angle piece, 26 mm
40010031	Reducer, 21-15 mm, Siemens, 5 pcs.
40010033	Spacer, 26 mm
40010034	Adapter for inlet frame
40010036	Adapter tube adaptors, 5 pcs.
40010038	Extension air duct, 31.5 mm
40010043	T-adapter mit mini-nozzle
40010048	Adapter, 15-16 mm, 5 pcs.
40010049	Adapter, 17-19 mm, 5 pcs.
40010050	Adapter, 19-20 mm, 5 pcs.
40010051	Adapter, 24-25 mm, 5 pcs.
40010056	Adapter, inlet frame, 18-19 mm, 5 pcs.
40010069	Angle-piece, 26 mm with mini-nozzles
40010079	Adapter, 25 mm, mini-nozzles

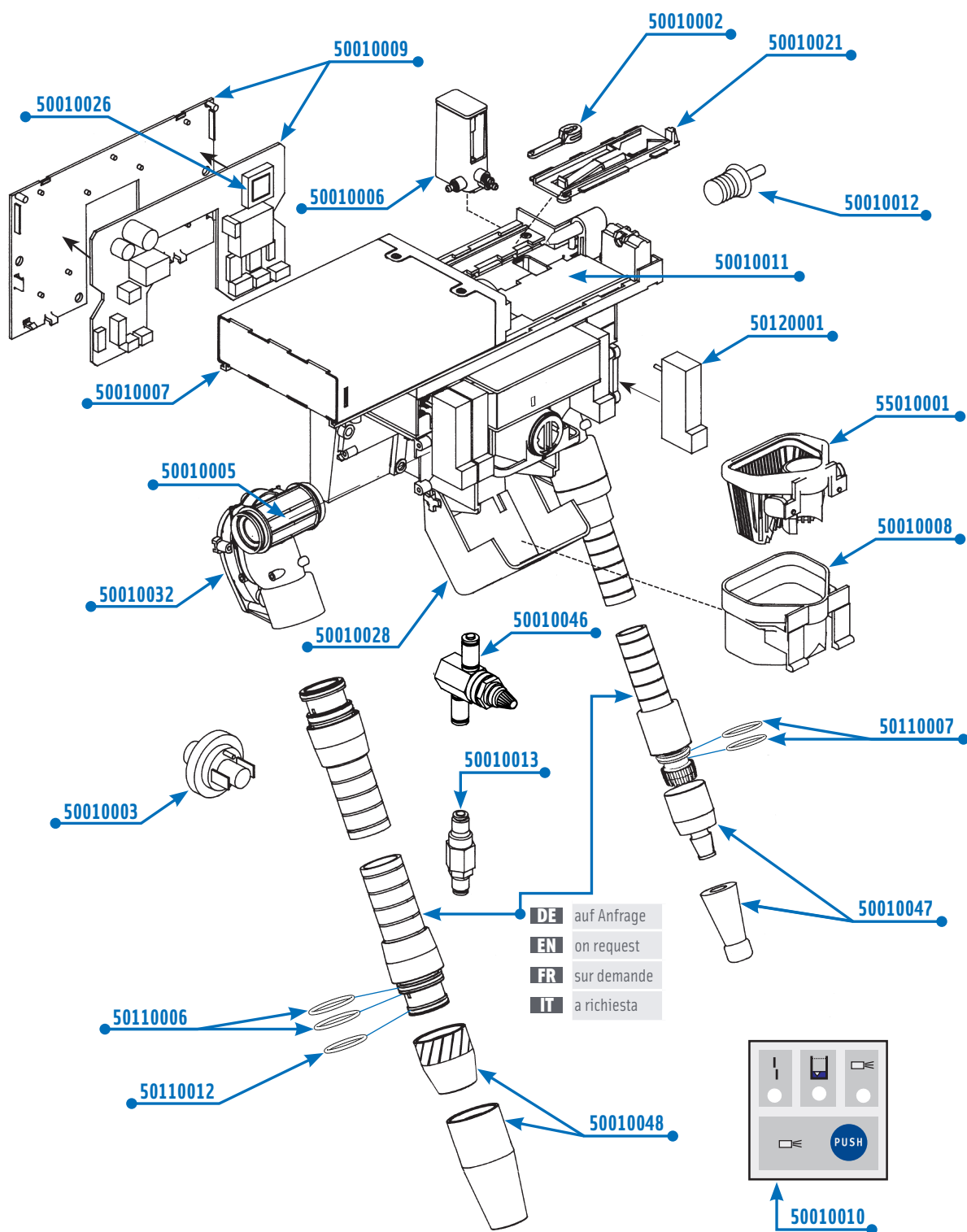
Order number	Designation
55100043	H1 suction hose, Ø 11 mm / 2200 mm for Cattani tray
55100044	Suction hose H1, Ø 17,5 mm / 2200 mm for Cattani tray
55100045	H1 suction hose, Ø 11 mm / 1490 mm / Novadent
55100046	H1 suction hose, Ø 17.5 mm / 1490 mm / Novadent
55100049	H1 suction hose, Ø 17.5 mm / 475 mm / Ancar without handpiece
55100050	H1 suction hose, Ø 11 mm / 2 m for Cattani tray, cut length = 2000 mm
55100051	H1 suction hose, Ø 17.5 mm / 2 m for Cattani tray, cut length = 2000 mm

Order number	Designation
40010090	Adapter inlet frame, 19-20 mm, 5 pcs.
40010091	Plug inlet frame
40010092	Y-adapter, 26 x 26 x 26 mm
40010093	Adapter, 31-32 mm, 1 pc.
40010096	Adapter, 16-17 mm, 5 pcs.
40010097	Adapter, inlet frame, 20-21 mm, 5 pcs.
40010098	Adapter, inlet frame, 24-25 mm, 5 pcs.
40010099	Adapter, 90°, 15 mm, 5 pcs.
40010100	Adapter, 15/18 mm, O-ring, 2 pcs.
40010102	Adapter, for METASYS, female
40010103	Lock clip, adapter
40010104	T-adapter
40010105	Adapter, 25-28 mm, double sealing face, 5 pcs.
40010106	Transport plug, ø26 mm, O-ring, 2 pcs.
40010108	Adapter, 10-11 mm, double sealing face, 5 pcs.
40010109	T-Fitting adapter, for 2 suction hoses
40010110	T-adapter, mini-nozzle, male
40010111	T-adapter, male
40010112	Adapter, 45°, air duct, O-ring
40010113	Adapter, 45°, O-ring
40010114	Extension, 72.5 mm
40010115	Extension, 64.5 mm
40010116	Extension, 56.5 mm
40010117	Extension, 49.5 mm
40010118	Extension, 27.0 mm
40010119	Adapter, 26 mm, connection 1/8"
40010120	Adapter, META Connect, 26 mm, mini-nozzle
40010121	Adapter, META Connect, inlet frame, 5 pcs.
40010122	Safety clips, Dürr Connect small, 20 mm, 5 pcs.
40010123	Y-adapter, 26 x 26 x 26 mm, male
40010124	Adapter, META Connect, Dürr Connect large, 36 mm
40010125	Adapter, META Connect, 32 mm

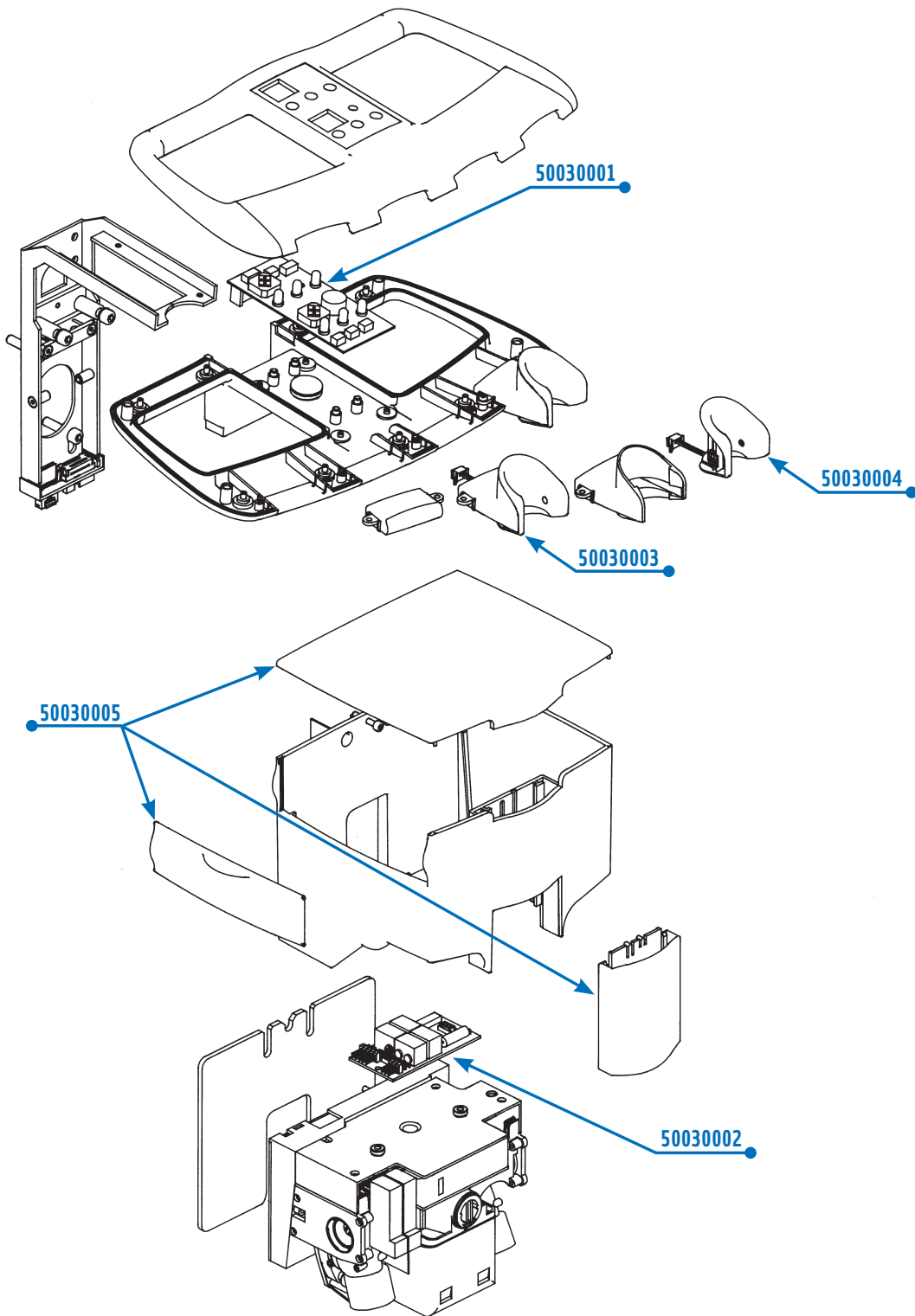
Order number	Designation
40010084	Adapter, für METASYS, male
40010085	Adapter, 45°, with air duct
40010086	Adapter, 15/26 mm
40010087	Adapter, 15/Dürr Connect
40010088	Adapter inlet frame, 15-16 mm, 5 pcs.
40010089	Adapter inlet frame, 16-17 mm, 5 pcs.

Order number	Designation
40010126	Adapter, META Connect, 36 mm
40010127	Adapter, META Connect, 50/40 mm
40010128	Adapter, inlet frame, 10-11 mm, 5 pcs.
40010129	Adapter, 15/26 mm, o-ring, male
40010130	Adapter, 15/10 mm, o-ring
40010131	T-adapter, mini-nozzles

H1 Hygiene System

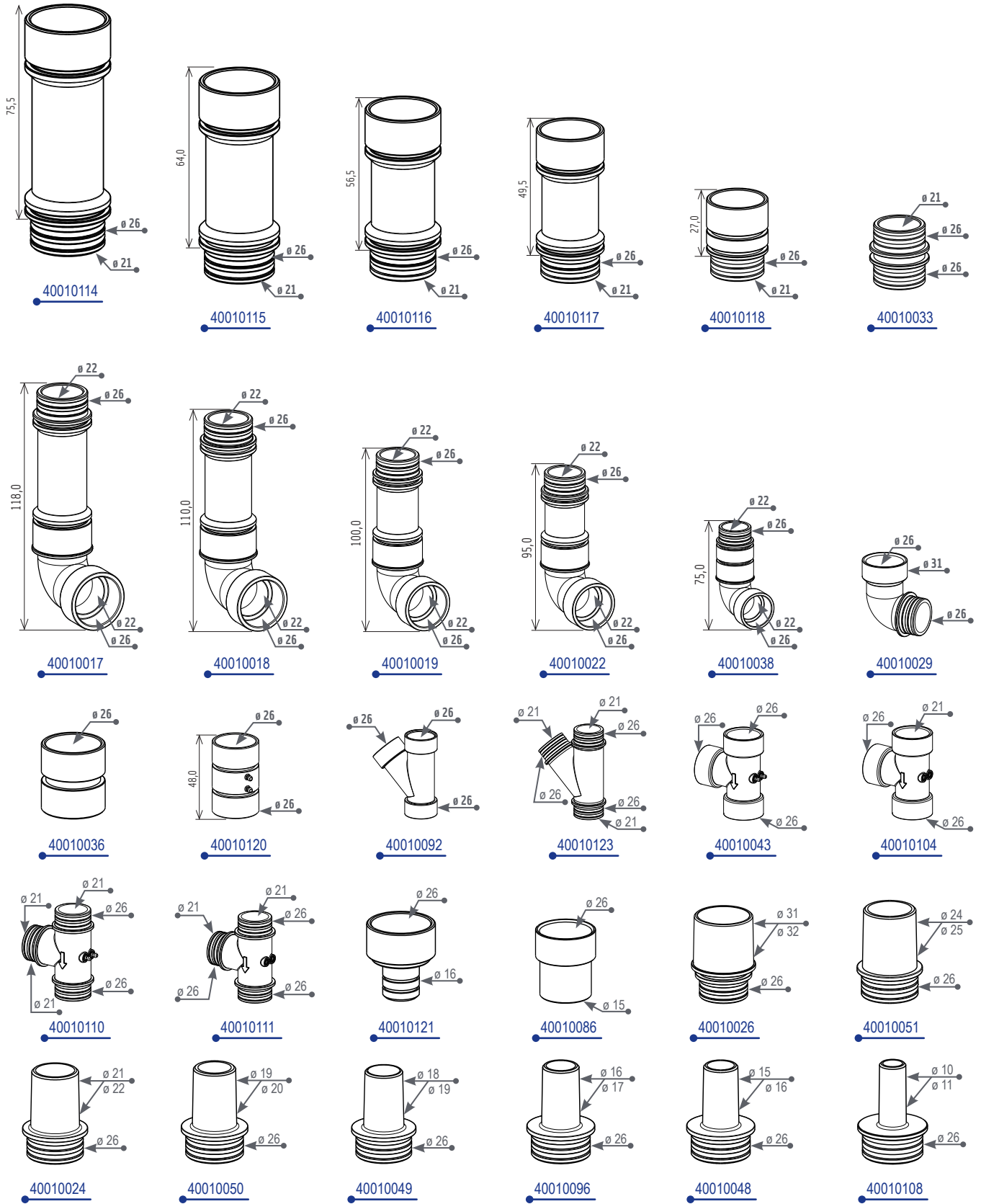


H1 Hygiene System



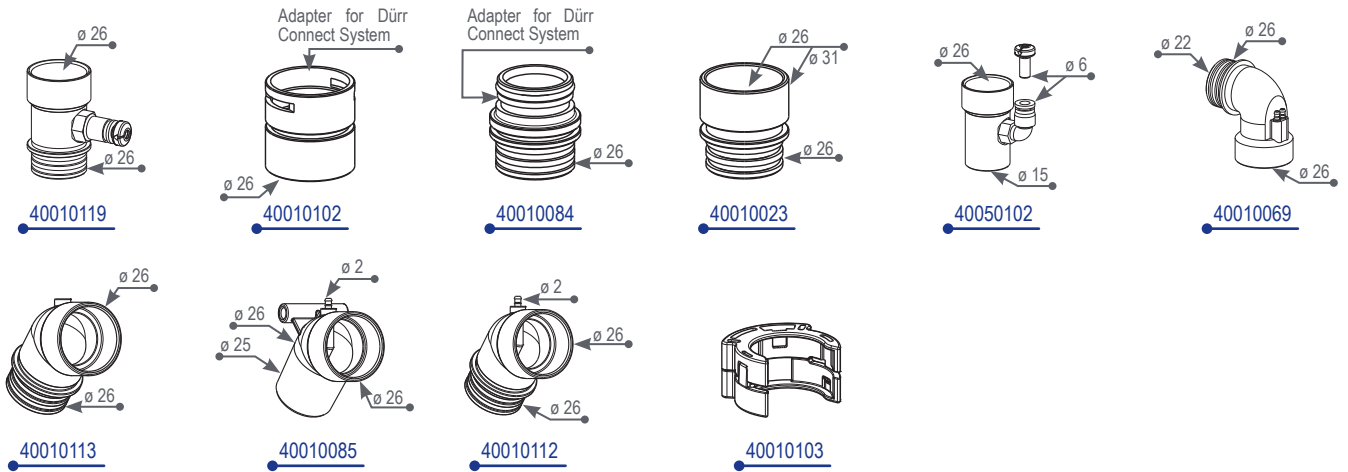
Hose nozzles and adapters

META Connect



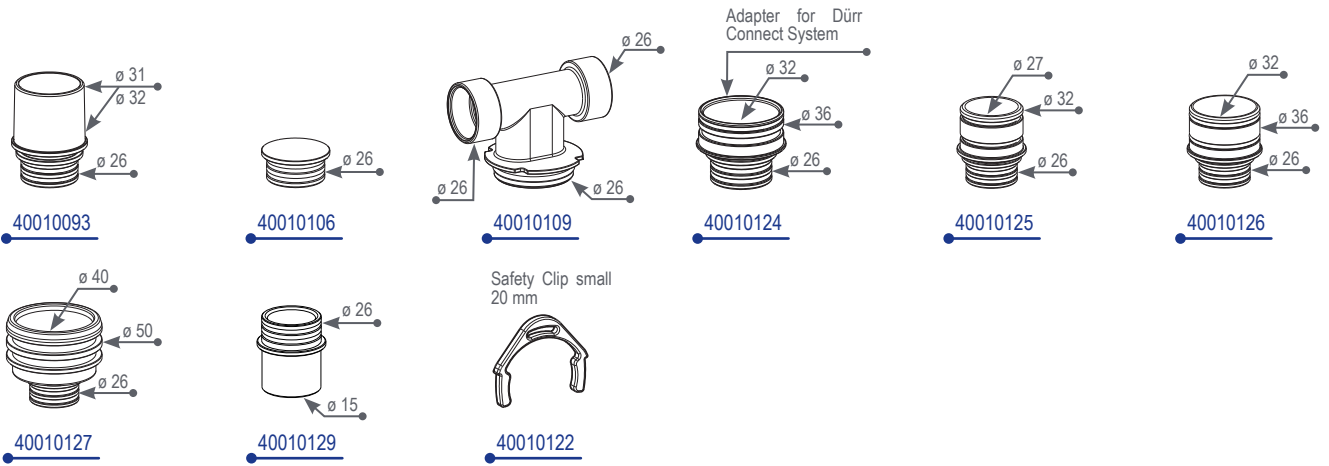
Hose nozzles and adapters

META Connect



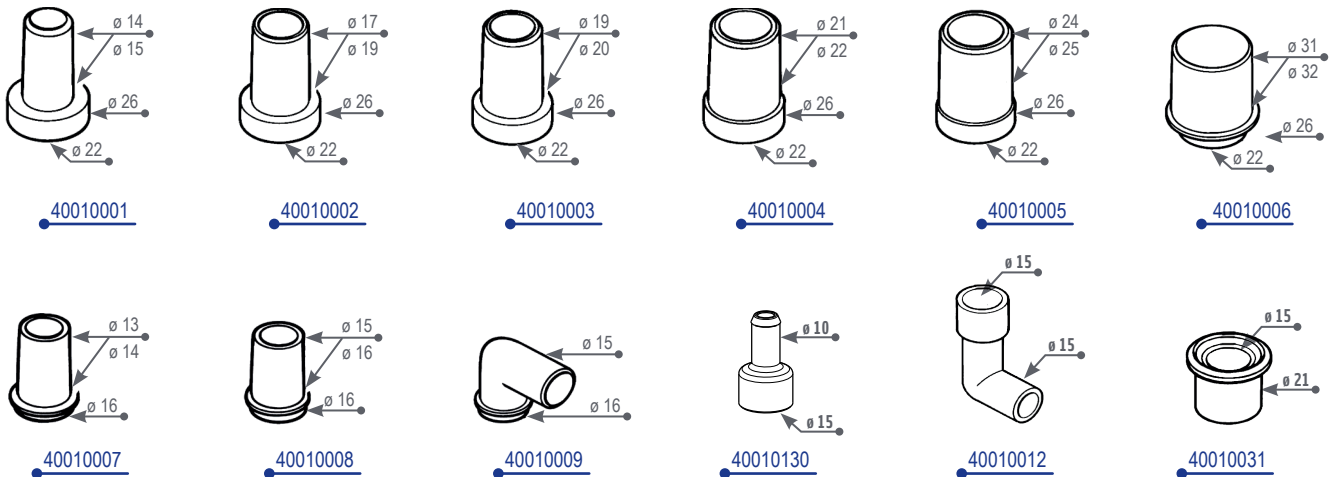
Hose nozzles and adapters

Can be combined with META Connect



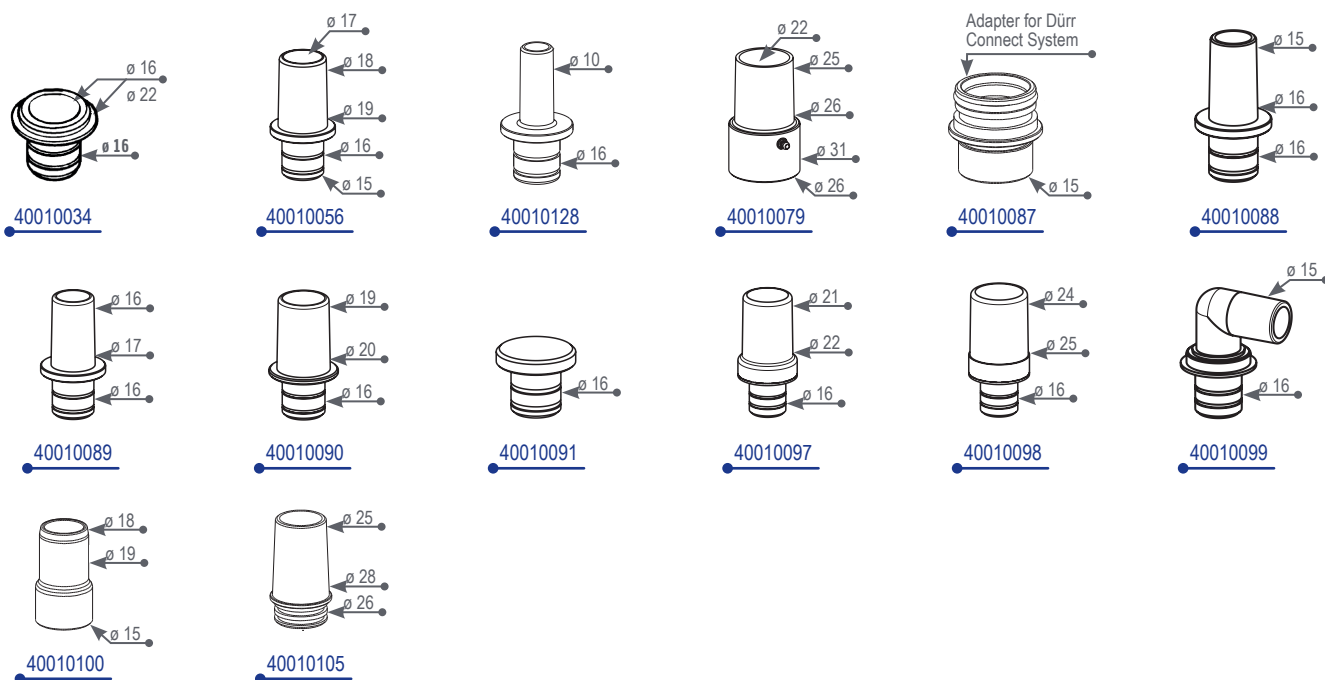
Hose nozzles and adapters

Cannot be combined with META Connect



Hose nozzles and adapters

Cannot be combined with META Connect



9.2. Warranty conditions

METASYS grants a guarantee of 12-36 months for specific products (duration of guarantee depends on the product according to the information in the current price list).

The guarantee covers all material faults that more than negligibly affect the function of the device. The guarantee does not cover damages caused by incorrect or improper handling as well as normal wear. Furthermore, the guarantee does not apply to the replacement of the amalgam collection container or to fragile parts such as glass, plastic, hoses, filters, condensate filters or membranes. Any incurred working and travel times are excluded from the warranty.

In order to determine the validity of the guarantee, the installation proof accompanying the device must be returned to METASYS immediately after proper assembly has taken place. In this case the warranty period begins with commissioning. In the event of installation without returning the installation proof to METASYS, any warranty claim is forfeited. Installation and return of installation proof must be completed within 24 months from the date of sale from METASYS.

Furthermore, any warranty claims of the customer expire if only one of the following circumstances arises, regardless of whether the circumstances arise for the customer of METASYS or a later owner or operator:

- > Improper installation, operation, maintenance or transport of the device. If METASYS parts have to be returned, the original METASYS packaging must be used for shipping. Prior to packaging and shipping, the METASYS device must be cleaned and disinfected. Any openings where residual fluids could leak must be closed.
- > Installation and return of installation proof have not been completed in the aforementioned 24 months.
- > Failure to send the Installation Proof to METASYS.
- > Installation and use of non-original METASYS parts.
- > Installation of the device by personnel who are neither trained nor authorized by METASYS.
- > Occurrence of damages through improper handling and operation or use of unapproved cleaning and/or disinfecting material, as well as non-compliance with the instructions for use.
- > Execution of repairs by unauthorised repair shops or unauthorised personnel.
- > Failure to comply with the prescribed maintenance intervals. Maintenance must be carried out 11-12 / 23-24 / 35-36 months after installation of the respective METASYS item.
- > Missing entries in the Equipment Logbook regarding the installation as well as prescribed servicing by technicians trained by METASYS.
- > Failure to take reasonable immediate measures to avoid further damages in the event of a malfunction.
- > Shipping of devices or components to METASYS without proper accompanying paperwork, in particular without error description or invoice for the purchase of the device.
- > Failure to provide visual images (photos, video clips ...) of the METASYS item complained about, as well as of its installation situation and ambient conditions.

METASYS reserves the right to demand the documentation supplied with the device to check the maintenance intervals for the assertion of warranty claims. The processing of warranty claims takes place exclusively according to the following method:

In the event of malfunctions, the device must be opened by an authorized technician, the relevant component taken out and sent to METASYS unopened and cleaned. The customer sends the device or component in question to METASYS at his own expense. METASYS checks whether there is a warranty claim. METASYS will repair the device or component if it is cost-effective. The customer is charged for the costs incurred for the repair, but not the replacement parts covered by the guarantee. The consignment of the device or component to METASYS always represents a repair order for METASYS. For cost estimates for the repair of returned devices, a processing fee* is charged if the warranty period has expired or no warranty case exists. For products inspections only without any cost

estimates a processing fee* can be charged. When sending the device or component to METASYS, an error description with all importation information about the device must always be included. The customer of METASYS may only provide payment in advance after consultation with METASYS. Only the affected component is to be sent in (smallest possible unit). If contaminated, intact parts are sent to METASYS without technical necessity, METASYS is entitled to destroy them without separate payment. The new part corresponding to the part to be destroyed is only delivered after a separate order and invoice. In any case, METASYS has the right to handle the guarantee through credit note or the return of new parts without conducting repairs. Guarantee services do not result in an extension of the warranty period nor do they initiate a new warranty period. The warranty period for installed replacement parts ends with that for the originally delivered device. The METASYS customer is obligated to make his customer aware of the conditions regarding the warranty processing. The statutory warranty rights of the customer remain unaffected.

* The current warranty conditions and fees can be found in the current METASYS price list.

9.3. Change history

Revision	Date	Description
ZK-58.213/00	14.12.2022	Newly created.



protect what you need



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Subject to printing and setting errors!