

# User manual

## MELAdem<sup>®</sup> 53 MELAdem<sup>®</sup> 53 C

Ion exchanger



EN

Dear customer,

We thank you for your confidence demonstrated by the purchase of this MELAG product. As an owner-run and operated family concern founded in 1951, we have a long history of successful specialization in hygiene products for practice-based use. Our focus on innovation, quality and the highest standards of operational reliability has established MELAG as the world's leading manufacturer in the instrument reprocessing and hygiene field.

You, our customer are justified in your demand for the best products, quality and reliability. Providing **“competence in hygiene”** and **“Quality – made in Germany”**, we guarantee that these demands will be met. Our certified quality management system is subject to close monitoring: one instrument to this end is our annual multi-day audit conducted in accordance with EN ISO 13485. This guarantees that all MELAG products are manufactured and tested in accordance with strict quality criteria.

The MELAG management and team.



# Contents




<b>1 General guidelines .....</b>	<b>4</b>
Symbols used .....	4
Formatting rules .....	4
Disposal .....	4
Safety .....	4
<b>2 Product description .....</b>	<b>5</b>
Intended use .....	5
Mode of functioning .....	5
Scope of delivery .....	5
Views .....	6
<b>3 Setup and installation .....</b>	<b>7</b>
Removing from the packaging .....	7
Installation location .....	7
Space requirements .....	7
Cold water connection .....	8
Connection of the water treatment unit .....	9
Water distributor for connecting several devices .....	10
Installation examples .....	12
Recommended product combinations .....	19
<b>4 Commissioning .....</b>	<b>21</b>
<b>5 Maintenance .....</b>	<b>22</b>
Maintenance intervals .....	22
Replacing the mixed-bed resin cartridge .....	22
Regenerating an exhausted mixed-bed resin cartridge .....	24
<b>6 Operating pauses .....</b>	<b>25</b>
Storage and transport .....	25
<b>7 Technical data .....</b>	<b>26</b>
<b>8 Accessories and spare parts .....</b>	<b>27</b>
<b>Glossary .....</b>	<b>28</b>

# 1 General guidelines




Please read this user manual carefully before commissioning the product. The manual includes important safety instructions. Make sure that you always have access to digital or printed version of the user manual.

Should the manual no longer be legible, is damaged or has been lost, you can download a new copy from MELAG download centre at [www.melag.com](http://www.melag.com).

## Symbols used

Symbol	Description
	Indicates a dangerous situation, which if not avoided, could entail slight to life-threatening injuries.
	Draws your attention to a situation, which if not avoided, could result in damage to the instruments, the practice fittings or the device.
	Draws your attention to important information.

## Formatting rules

Symbol	Description
	Prerequisites for the following handling instruction.
	Reference to the glossary or another text section.
	Information for safe handling.

## Disposal

Dispose of this product and spare parts, e.g. seals, that are no longer used properly. Comply with all relevant disposal specification in terms of possibly contaminated waste.

The packaging protects the product against transport damage. The packaging materials have been selected for their environmentally-friendly and recycling properties and can be recycled. Returning the packaging to the material flow reduces the amount of waste and saves raw materials.

## Safety



Observe the safety instructions contained in the individual chapters when using the product. Use the product only for the purpose specified in these instructions. Failure to comply with the safety instructions can result in injury and/or damage to the product.

## 2 Product description

---

### Intended use

The MELAdem 53/MELAdem 53 C mixed-bed resin cartridge operates according to the ion exchange method and produces [▶demineralised](#) (de-ionised) water. Tap water of drinking water quality is required for this.



#### PLEASE NOTE

**The water treatment unit does not provide low-germ water.**

MELAdem 53/MELAdem 53 C is suitable for supplying washer-disinfectors and small steam sterilizers with feed water. Optionally, a MELAJet spray pistol can be connected and demineralised water can be drawn for other purposes.

This water treatment unit is intended for use in the medical sector, e.g. in clinics, in general medical and dental practices and other medical care facilities outside the patient environment.

The water treatment unit is not a medical device within the meaning of European Regulation 2017/745 on medical devices.

### Mode of functioning

The mixed-bed resin cartridge is filled with a cation and anion resin which removes the salts dissolved in water using the so-called adsorption process.

The mixed-bed resin is exhausted after absorbing a certain amount of salt and must then be replaced and regenerated, see [Replacing the mixed-bed resin cartridge](#) [▶ page 22] and [Regenerating an exhausted mixed-bed resin cartridge](#) [▶ page 24].

The capacity of a MELAdem 53/MELAdem 53 C mixed-bed resin cartridge depends on the hardness of the local water supply, see [Technical data](#) [▶ page 26].

### Scope of delivery

Please check the scope of delivery before using the product.

- 2x mixed-bed resin cartridge MELAdem 53 or MELAdem 53 C
- User manual
- Record of installation and setup
- Warranty certificate
- Connection kit
  - T-piece 3/4" with seal (8 mm, black)
  - Pipe elbow 3/4" with seal (8 mm, black)
  - Connection hose (2.5 m)
  - Reducing nipple 3/4"-1/4" with seal (3 mm, black)
  - Drain valve
  - Y-fitting for water supply with seal (3 mm, black)
- Sealable pouch with cable tie

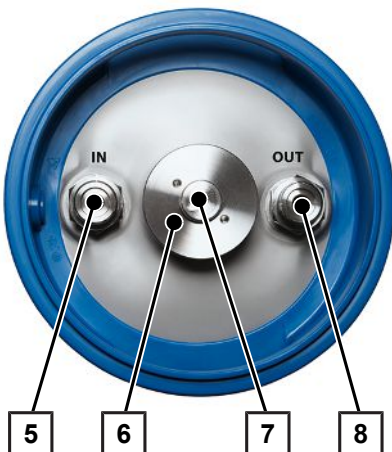
## Views

### Front view



- 1 Polypropylene head ring
- 2 Label for the serial number and practice address
- 3 Stainless steel mixed-bed resin cartridge
- 4 Polypropylene foot ring

### Top view



- 5 Connection to cold water of the local drinking water supply (IN)
- 6 Screw connection opening
- 7 Degassing screw
- 8 ►DI water connection (OUT)

## 3 Setup and installation

Comply with the following for safe handling:

- After unpacking the product, check it for transport damage.
- MELAG recommends that the product should only be set up, installed and commissioned by persons authorised by MELAG.
- Install and operate the product in a frost-free environment.

### Removing from the packaging

1. Remove both mixed-bed resin cartridges supplied from the packaging.
2. Store one of the two mixed-bed resin cartridges supplied as a spare in accordance with the storage conditions, see [Storage and transport](#) ► page 25].

### Installation location

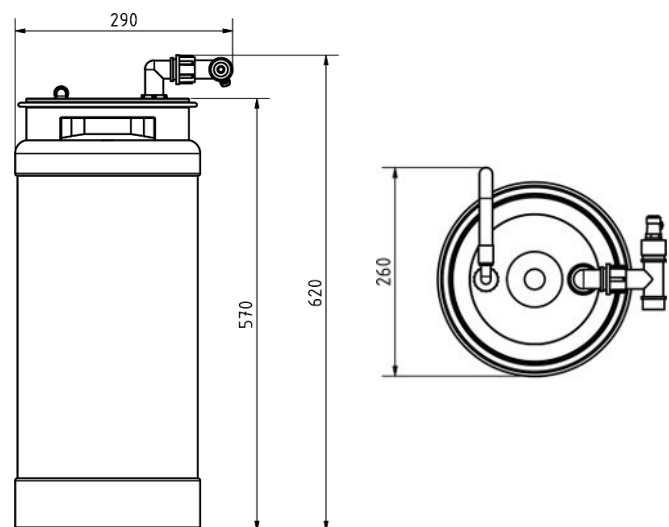
- Install the water treatment unit in a clean, frost-free place that can be ventilated.
- The installation location permits a careful installation, operation and maintenance.
- Set up the water treatment unit in a vertical position.
- The hose connections are freely accessible.
- A cut-off valve with a check valve and a 3/4" external thread connection is installed in close proximity to the installation location.
- To ensure safe operation of the water treatment unit, the water pressure on the building side is between 1.5-10 bar.
- Make sure that the temperature along the inlet hose does not rise above 40 °C.
- If the room in which the water treatment unit is installed does not have a floor drain, MELAG recommends a leakage water detector (e.g. water stop from MELAG), which shuts off the water supply in the event of damage via a moisture sensor on the floor and with the help of a solenoid valve.

### Space requirements

The space required for the mixed-bed resin cartridge equals the dimensions plus at least 25 cm in height for the HD safety combination in accordance with ►EN 1717 and clear access for the hose connections.

Depending on the connection kit variant, a space of approx. 24-29 cm is required in the width. Examples of connection variants can be found under [Connection of the water treatment unit](#) ► page 9].

Place the mixed-bed resin cartridge in an adjacent base cabinet if the washer-disinfector or the steam sterilizer is set up as a built-in device.



## Cold water connection



### PLEASE NOTE

MELAG recommends connecting the water treatment unit directly to the cold water (drinking water quality). Connecting water purification systems or filters that work with oxidants (e.g. chlorine) upstream can affect the mixed-bed resin and thus impair the performance of the water treatment unit.

Increased requirements can be placed on the quality of the **DI water** (e.g. a low endotoxin content) for the **reprocessing** of certain medical devices such as ophthalmic instruments.

Note the following:

- In such cases, an additional filter system is required for the reprocessing of DI water.
- It is possible that the cold water has been contaminated by the water installation. This includes both the domestic installation and the entire upstream peripherals.
- Arrange for the actual cold water quality to be tested at the point of use or request an appropriate report (e.g. from the building management) before setting up and installing the water treatment unit.
- Further information is available from the corresponding trade associations and their publications. If in doubt, contact your stockist or the pertinent professional association.

## Requirements for connection to the water pipe

To ensure **standard-compliant** connection of the mixed-bed resin cartridge with non-return (check) valve and pipe aerator, MELAG recommends one of the two alternative connections described in the following.

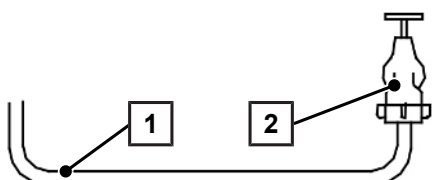


### PLEASE NOTE

To prevent water damage, MELAG recommends the use of a leakage water detector e.g. the MELAG water stop.

### Alternative connection 1 - installation with safety combination

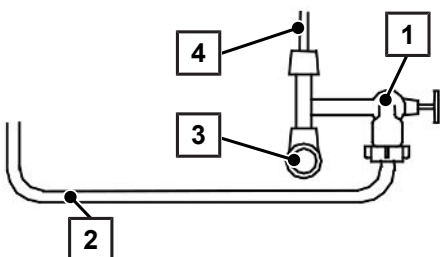
If a separate water connection (nominal size DN15 with 1/2" collar) is present or installed, a water tap with integrated safety combination (non-return (check) valve and pipe aerator) is required.



- 1 Cold water inlet hose
- 2 Water tap 3/4" with safety combination

### Alternative connection 2 - installation with an angle valve

If a cold water connection with angle valve and a pipe Ø 10 mm is available or installed, an additional water tap with integrated safety combination (non-return (check) valve and pipe aerator) is installed by mounting it directly on an existing angle valve.



- 1 Additional water tap with integrated safety combination
- 2 Cold water inlet hose
- 3 Existing angle valve
- 4 Cold water pipe, Ø 10 mm (for mixer tap)

## Protection with a safety combination HD in accordance with EN 1717

Consumers (devices) must be connected to the tap water system according to [EN 1717](#) so that the tap water system is protected from pollution. If there is no safeguard at the connection point, you can use the optionally available safety combination HD in accordance with EN 1717 Part 4, see [Accessories and spare parts](#) [▶ page 27].

A safety combination HD should consist of a non-return (check) valve and a pipe aerator. Comply with all statutory national specifications.

## Connection of the water treatment unit

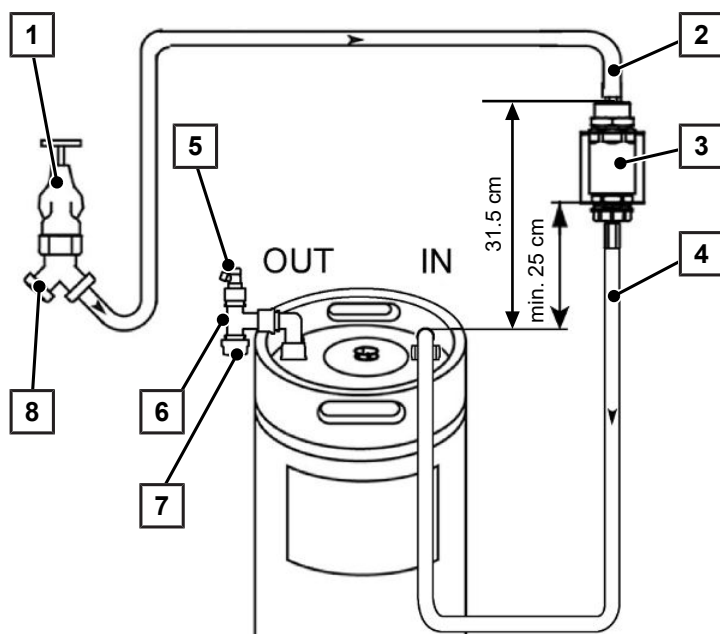
1. Unscrew the yellow caps from the connection fittings before connecting the hoses.



2. Fix the yellow caps in the sealable pouch supplied to the head ring of the mixed-bed resin cartridge. Use the cable tie.



### Example of a connection diagram



- 1 Water tap (on-site) with integrated safety combination
- 2 Pipe elbow with water inlet hose (included in the scope of delivery of the safety combination)
- 3 Safety combination with wall mount
- 4 Connection hose (2.5 m) (IN)
- 5 Drain valve for mixed-bed resin cartridge pressure relief
- 6 T-piece (with seal) and pipe elbow (with seal) for [DI water](#) (OUT)
- 7 Connection of DI water inlet hose to a MELAG device (e.g. MELAtherm)
- 8 Connection of cold water inlet hose to a MELAG device (e.g. steam sterilizer)

1. If not already present, attach a safety combination HD (pos. 3, optional) to the wall 25 cm above the mixed-bed resin cartridge in accordance with [EN 1717](#).
2. Connect the water inlet hose (pos. 2) to the tap water system or to the Y-piece supplied (pos. 8).

3. Connect the water inlet hose (pos. 2) with seal to the top of the safety combination (pos. 3).
4. Connect the water inlet hose (pos. 4) to the bottom of the safety combination (pos. 3).
5. Connect the angled side of the water inlet hose (pos. 4) to the "IN" connection fitting of the mixed-bed resin cartridge. Ensure that the union nut is screwed tightly onto the connection fitting.
6. Depending on requirements and local conditions, connect the pipe elbow or the T-piece (pos. 6) to the "OUT" connection fitting of the mixed-bed resin cartridge. Examples of possible connection variants can be found in the following.
7. Screw the drain valve (pos. 5) into the 3/4"-1/4" reducing nipple and fit it at the desired position with the seal (3 mm). If necessary, connect the drain hose to the drain valve.
8. Connect the DI water inlet hose of the MELAG device to the pipe elbow or the T-piece (pos. 7).

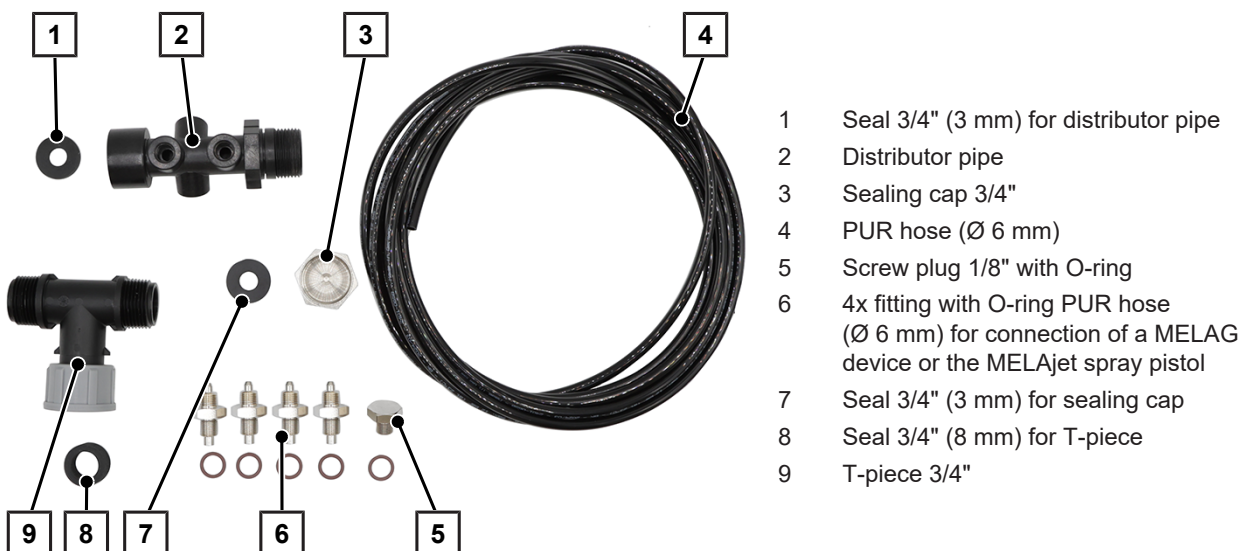
#### Connection variants for the connection kit

Three connection variants for the connection kit are shown below. Further variants are possible depending on requirements and local conditions.



## Water distributor for connecting several devices

MELAG recommends using the water distributor for the connection of multiple devices, see [Accessories and spare parts](#) [► page 27]. The articles of the water distributor can be combined with the articles of the connection kit as required. An additional washer-disinfector (e.g. MELAtherm 10) and a maximum of three other (combination) steam sterilizers can be optionally connected to the unused connections.



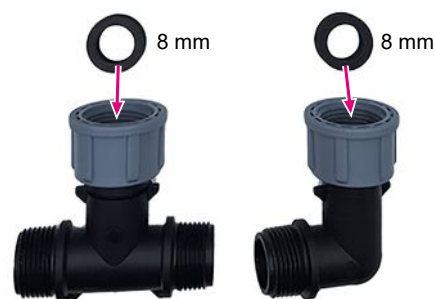
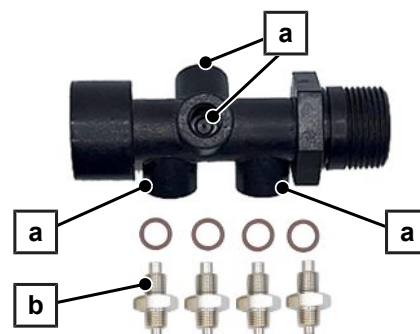
## Installing the water distributor

The water distributor is assembled before installation according to the number of devices present in the practice. The flexible system enables a wide range of installation variants.

The 1/8" connections on the distributor pipe are blocked on delivery. Open as many connections as required using the fittings.

The following must be fulfilled or present:

- ✓ Water distributor: Spanner for connections (14 mm, 30 mm, 32 mm)
  - ✓ Drain valve: open-end spanner (AF17)
  - ✓ Allen key (5 mm)
1. Use the open-end spanner to screw the fitting incl. O-ring (pos. b) in a closed 1/8" connection (pos. a) of the distributor pipe until the closure breaks open.
  2. Remove the scrap out of the distributor pipe completely.
  3. Use the open-end spanner to tighten (approx. 5 Nm) the fitting (pos. b) in the 1/8" connection.
  4. Use the seal on the internal thread of the grey union nut for the assembly of the T-piece and/or pipe elbow.

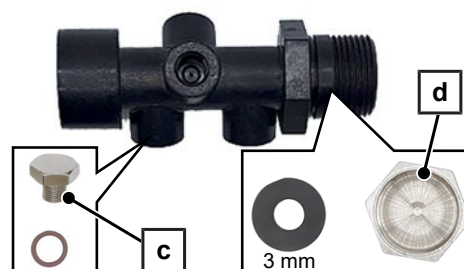


5. Connect the water distributor set to the "OUT" connection fitting of the mixed-bed resin cartridge as required in combination with the connection kit.

For another installation example with several devices, see [Example 5 - MELAtherm 10, two steam sterilizers and MELAdem 53/53 C](#) [► page 16].



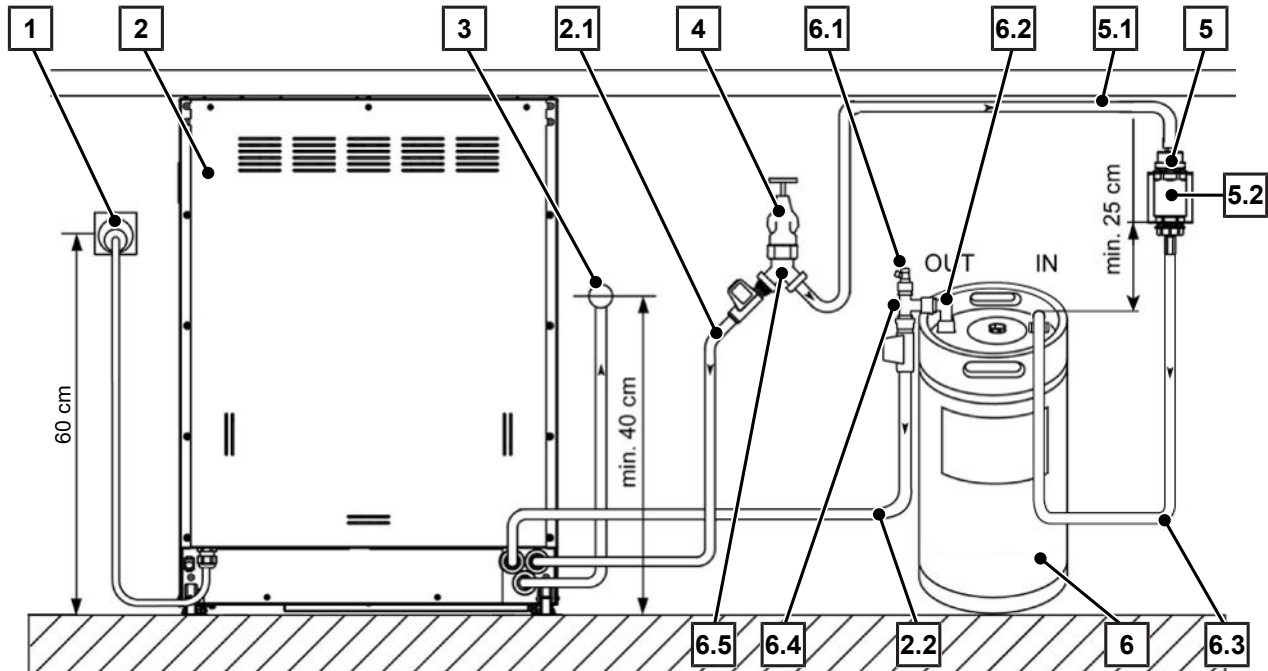
6. Close off unused openings with a screw plug incl. O-ring (pos. c).
7. If necessary, seal the 3/4" connection of the distributor pipe with the 3/4" sealing cap (pos. d) including seal.
8. Then check all hose connections for leaks.



## Installation examples

### Example 1 - MELAtherm 10 and MELAdem 53 C

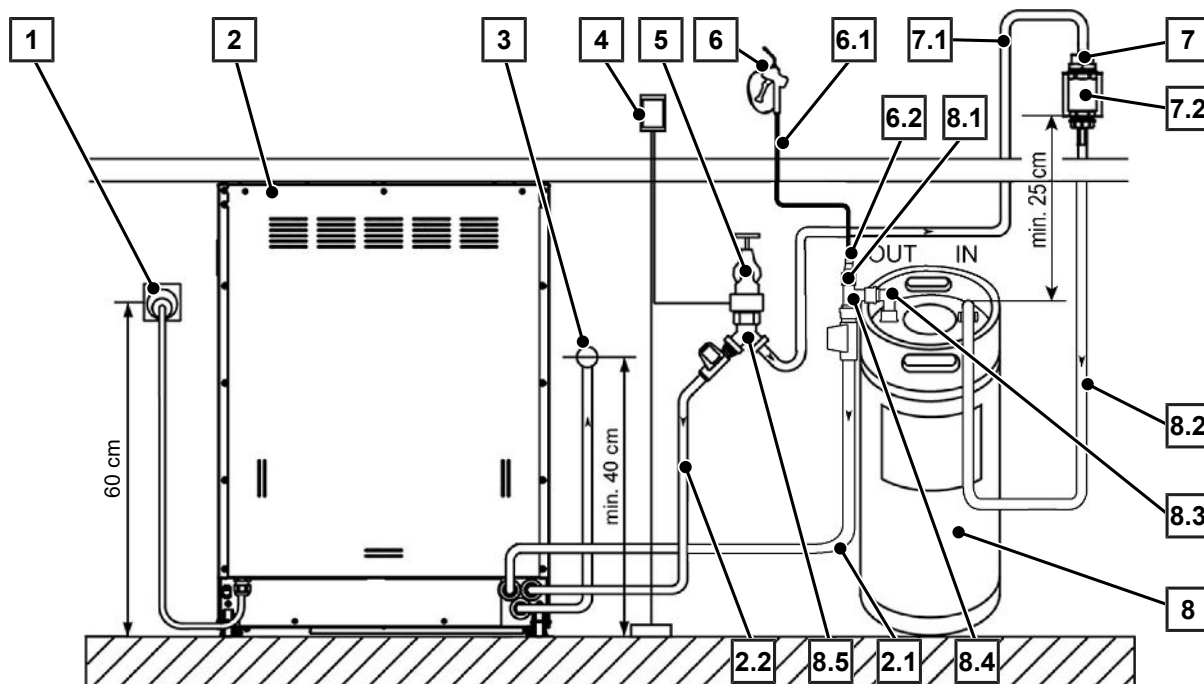
The following installation example shows the connection of the MELAdem 53/53 C to the MELAtherm 10/MELAtherm 10 Evolution.



Pos.	Description	Art. no.	Note
1	Mains connection	--	on-site
2	MELAtherm 10/MELAtherm 10 Evolution	--	--
2.1	Water inlet hose (2 m), cold water	ME69530	present on device-side
2.2	Water inlet hose (2 m), DI water	ME69540	present on device-side
3	Wastewater connection	--	on-site
4	Water tap	--	on-site
5	Safety combination HD with wall mount incl. hose (2.5 m)	ME70686	optionally available to order
5.1	Water inlet hose EN 1717 (2.5 m)	ME24930	contained in ME70686
5.2	Safety combination with wall mount	--	contained in ME70686
6	MELAdem 53 C with 2 containers (15 l each)/ MELAdem 53 with 2 containers (20 l each)	ME01036/ ME01038	included in delivery
6.1	Drain valve	--	included in delivery
6.2	Pipe elbow with seal, outlet side	ME70906	included in delivery
6.3	Connection hose (2.5 m)	ME70904	included in delivery
6.4	T-piece with seal, outlet side	ME70902	included in delivery
6.5	Y-fitting for water supply with seal	ME37315	included in delivery

## Example 2 - MELAtherm 10, MELAdem 53/53 C and MELAjet

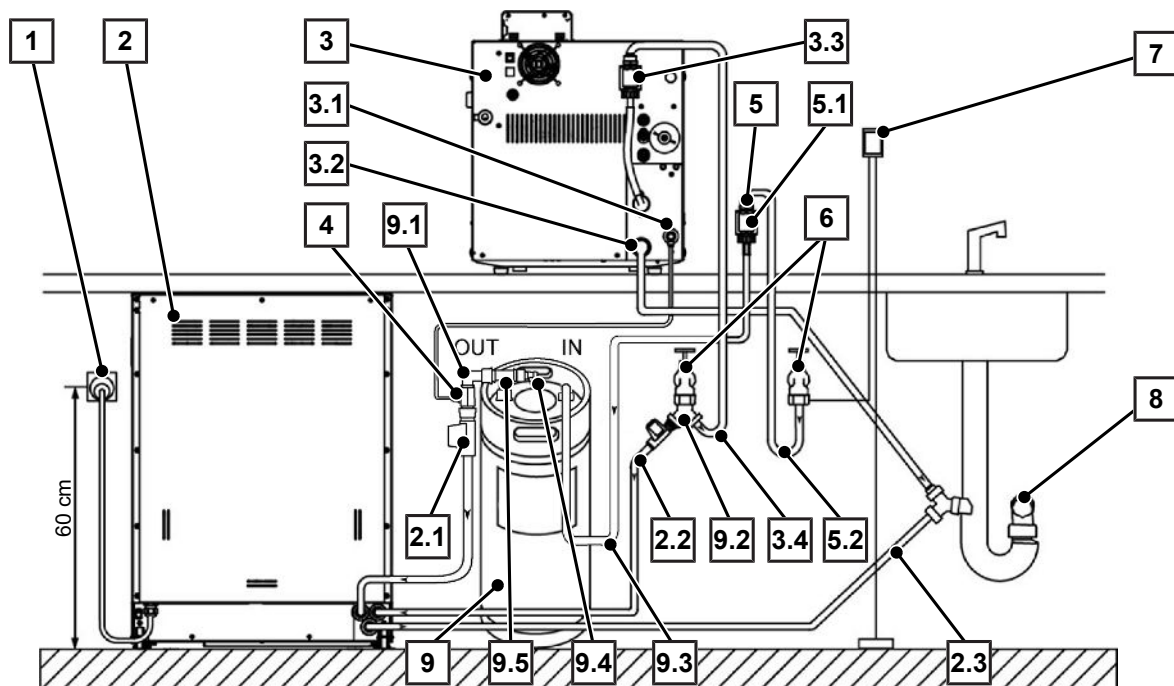
The following installation example shows the connection of the MELAdem 53/53 C to the MELAtherm 10/MELAtherm 10 Evolution and to the MELAjet spray pistol.



Pos.	Description	Art. no.	Note
1	Mains connection	--	on-site
2	MELAtherm 10/MELAtherm 10 Evolution	--	--
2.1	Water inlet hose (2 m), DI water	ME69540	present on device-side
2.2	Water inlet hose (2 m), cold water	ME69530	present on device-side
3	Wastewater connection	--	on-site
4	Water stop (leakage water detector with shut-off valve and probe)	ME01056	optionally available to order
5	Water tap	--	on-site
6	MELAjet spray pistol	ME27300	optionally available to order
6.1	PUR hose (6/4 mm, 2.5 m)	ME28820	contained in ME27300
6.2	Screw-in fitting 1/4\" on hose 6/4 mm	ME53450	contained in ME27300
7	Safety combination HD with wall mount incl. hose (2.5 m)	ME70686	optionally available to order
7.1	Water inlet hose EN 1717 (2.5 m)	ME24930	contained in ME70686
7.2	Safety combination with wall mount	--	contained in ME70686
8	MELAdem 53 C with 2 containers (15 l each)/ MELAdem 53 with 2 containers (20 l each)	ME01036/ ME01038	included in delivery
8.1	Drain valve	--	included in delivery
8.2	Connection hose (2.5 m)	ME70904	included in delivery
8.3	Pipe elbow with seal, outlet side	ME70906	included in delivery
8.4	T-piece with seal, outlet side	ME70902	included in delivery
8.5	Y-fitting for water supply with seal	ME37315	included in delivery

### Example 3 - MELAtherm 10, steam sterilizer (fixed water connection) and MELAdem 53/53 C

The following installation example shows the connection of the MELAdem 53/53 C to the MELAtherm 10/MELAtherm 10 Evolution and to the Vacuklav 40 B+/44 B+ *Evolution*<sup>1)</sup>.



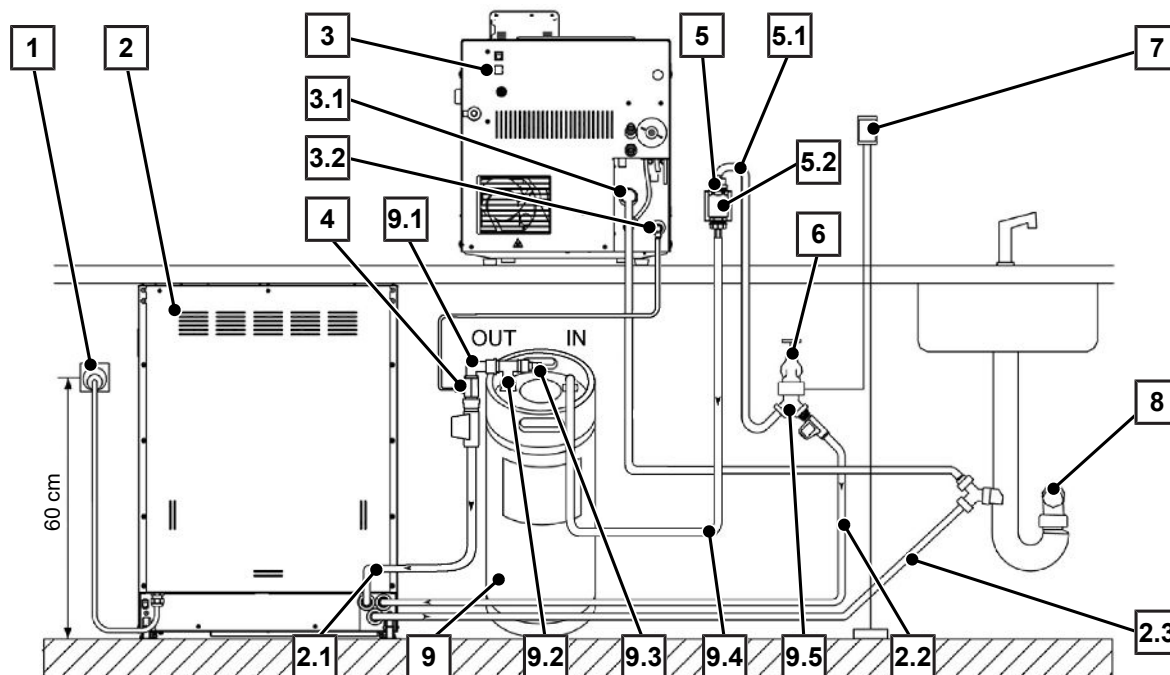
Pos.	Description	Art. no.	Note
1	Mains connection	--	on-site
2	MELAtherm 10/MELAtherm 10 Evolution	--	--
2.1	Water inlet hose (2 m), DI water	ME69540	present on device-side
2.2	Water inlet hose (2 m), cold water	ME69530	present on device-side
2.3	Water outlet hose (2 m)	ME60580	present on device-side
3	Steam sterilizer with fixed water connection	--	--
3.1	Feed water connection	--	present on device-side
3.2	Cooling water outflow	--	present on device-side
3.3	Safety combination EN 1717 incl. mount	ME82375	present on device-side
3.4	Water inlet hose EN 1717 (2.5 m)	ME24930	present on device-side
4	Water branch	ME37241	optionally available to order
5	Safety combination HD with wall mount incl. hose (2.5 m)	ME70686	optionally available to order
5.1	Safety combination with wall mount	--	contained in ME70686
5.2	Water inlet hose EN 1717 (2.5 m)	ME24930	contained in ME70686
6	Water tap	--	on-site
7	Water stop (leakage water detector with shut-off valve and probe)	ME01056	optionally available to order
8	Wall outlet	--	on-site
9	MELAdem 53 C with 2 containers (15 l each)/ MELAdem 53 with 2 containers (20 l each)	ME01036/ ME01038	included in delivery
9.1	Pipe elbow with seal, outlet side	ME70906	included in delivery
9.2	Y-fitting for water supply with seal	ME37315	included in delivery
9.3	Connection hose (2.5 m)	ME70904	included in delivery
9.4	Drain valve	--	included in delivery
9.5	T-piece with seal, outlet side	ME70902	included in delivery

If using with a Cliniklav 25, connect the mixed-bed resin cartridge to the steam sterilizer reservoir.

<sup>1)</sup> Other MELAG steam sterilizers (with fixed water connection) can also be connected

### Example 4 - MELAtherm 10, stand-alone steam sterilizer and MELAdem 53/53 C

The following installation example shows the connection of the MELAdem 53/53 C to the MELAtherm 10/MELAtherm 10 Evolution and to the Vacuklav 41 B+/43 B+ *Evolution*<sup>2)</sup>.

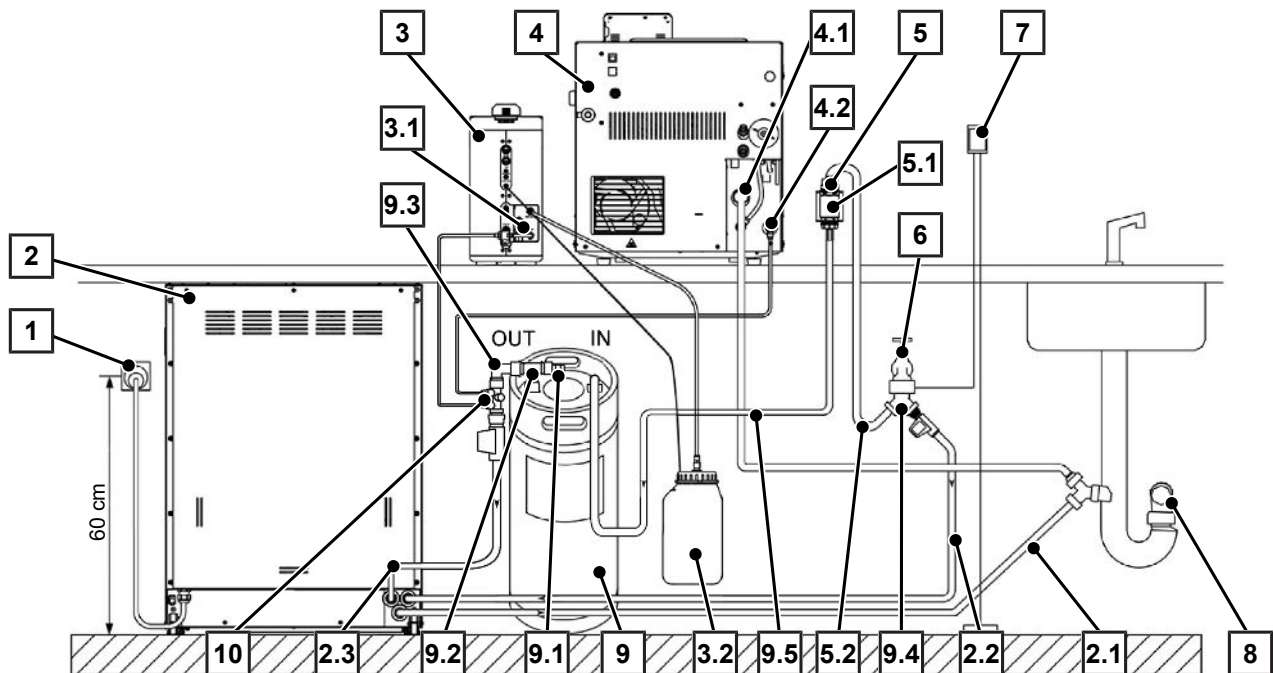


Pos.	Description	Art. no.	Note
1	Mains connection	--	on-site
2	MELAtherm 10/MELAtherm 10 Evolution	--	--
2.1	Water inlet hose (2 m), DI water	ME69540	present on device-side
2.2	Water inlet hose (2 m), cold water	ME69530	present on device-side
2.3	Water outlet hose (2 m)	ME60580	present on device-side
3	Steam sterilizer stand-alone	--	--
3.1	One-way outlet	--	present on device-side
3.2	Feed water connection	--	present on device-side
4	Water branch	ME37241	optionally available to order
5	Safety combination HD with wall mount incl. hose (2.5 m)	ME70686	optionally available to order
5.1	Water inlet hose EN 1717 (2.5 m)	ME24930	contained in ME70686
5.2	Safety combination with wall mount	--	contained in ME70686
6	Water tap	--	on-site
7	Water stop (leakage water detector with shut-off valve and probe)	ME01056	optionally available to order
8	Wall outlet	--	on-site
9	MELAdem 53 C with 2 containers (15 l each)/ MELAdem 53 with 2 containers (20 l each)	ME01036/ ME01038	included in delivery
9.1	Pipe elbow with seal, outlet side	ME70906	included in delivery
9.2	T-piece with seal, outlet side	ME70902	included in delivery
9.3	Drain valve	--	included in delivery
9.4	Connection hose (2.5 m)	ME70904	included in delivery
9.5	Y-fitting for water supply with seal	ME37315	included in delivery

<sup>2)</sup> Other (stand-alone) MELAG steam sterilizers can also be connected with the help of a separate connection set

### Example 5 - MELAtherm 10, two steam sterilizers and MELAdem 53/53 C

The following installation example shows the connection of the MELAdem 53/53 C to the MELAtherm 10/MELAtherm 10 Evolution and to the Vacuklav 41 B+/43 B+ *Evolution*<sup>3)</sup> and MELAquick 12+/ 12+ p.

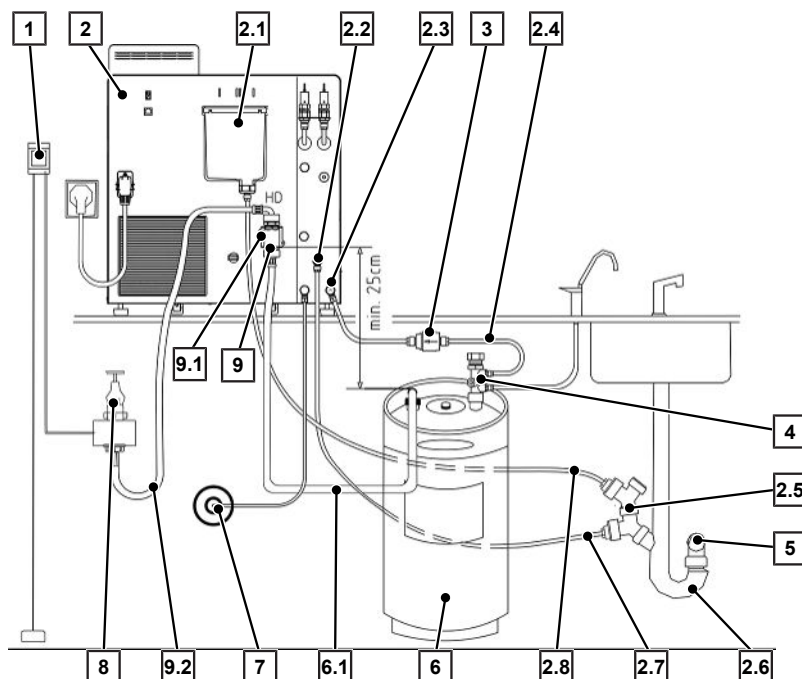


Pos.	Description	Art. no.	Note
1	Mains connection	--	on-site
2	MELAtherm 10/MELAtherm 10 Evolution	--	--
2.1	Water outlet hose (2 m)	ME60580	present on device-side
2.2	Water inlet hose (2 m), cold water	ME69530	present on device-side
2.3	Water inlet hose (2 m), DI water	ME69540	present on device-side
3	MELAquick 12+/MELAquick 12+ p	--	--
3.1	Feed water connection	--	present on device-side
3.2	Wastewater container, complete	ME74215	present on device-side
4	Vacuklav 41 B+ <i>Evolution</i> /Vacuklav 43 B+ <i>Evolution</i>	--	--
4.1	One-way outlet	--	present on device-side
4.2	Feed water connection	--	present on device-side
5	Safety combination HD with wall mount incl. hose (2.5 m)	ME70686	optionally available to order
5.1	Safety combination with wall mount	--	contained in ME70686
5.2	Water inlet hose EN 1717 (2.5 m)	ME24930	contained in ME70686
6	Water tap	--	on-site
7	Water stop (leakage water detector with shut-off valve and probe)	ME01056	optionally available to order
8	Wall outlet	--	on-site
9	MELAdem 53 C with 2 containers (15 l each)/ MELAdem 53 with 2 containers (20 l each)	ME01036/ ME01038	included in delivery
9.1	Drain valve	--	included in delivery
9.2	T-piece with seal, outlet side	ME70902	included in delivery
9.3	Pipe elbow with seal, outlet side	ME70906	included in delivery
9.4	Y-fitting for water supply with seal	ME37315	included in delivery
9.5	Connection hose (2.5 m)	ME70904	included in delivery
10	Water distributor for MELAdem 53	ME69005	optionally available to order

<sup>3)</sup> Other (stand-alone) MELAG steam sterilizers can also be connected with the help of a separate connection set

## Example 6 - Careclave and MELAdem 53/53 C (HD)

The following installation example shows the connection of the MELAdem 53/53 C to the Careclave 618 by means of the type HD safety combination.

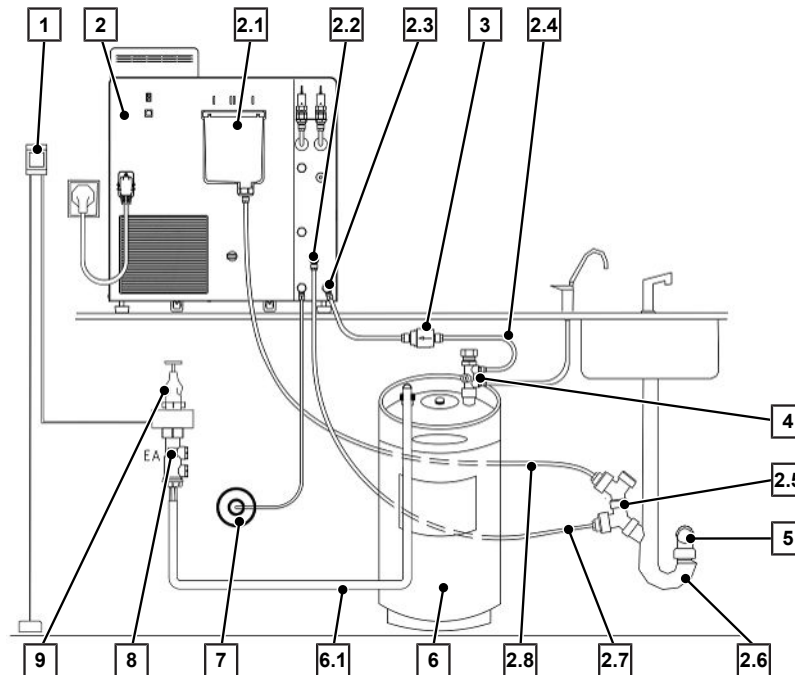


Pos.	Description	Art. no.	Note
1	Water stop (leakage water detector with shut-off valve and probe)	ME01056	optionally available to order
2	Careclave 618	--	--
2.1	Overflow funnel	--	present on device-side
2.2	Wastewater connection	--	present on device-side
2.3	Feed water connection, water treatment unit	--	present on device-side
2.4	PUR hose (black, 6/4 mm)	ME28820	present on device-side
2.5	2x Double support sleeve for an existing trap	ME37400	present on device-side
2.6	Double-chamber siphon for DN 40	ME26635	present on device-side
2.7	PTFE hose (8/6 mm)	ME39180	present on device-side
2.8	PTFE hose (8/6 mm)	ME39180	present on device-side
3	Filter for MELAdem, connection to Vacuklav/Euroklav	ME48240	optionally available to order
4*)	Water distributor for MELAdem 53	ME69005	optionally available to order
5	Wall outlet	--	on-site
6	MELAdem 53 C with 2 containers (15 l each)/ MELAdem 53 with 2 containers (20 l each)	ME01036/ ME01038	included in delivery
6.1	Connection hose (2.5 m)	ME70904	included in delivery
7	Compressed air supply	--	on-site
8	Water tap 3/4" with safety combination	--	on-site
9	Safety combination HD with wall mount incl. hose (2.5 m)	ME70686	optionally available to order
9.1	Safety combination with wall mount	--	contained in ME70686
9.2	Water inlet hose EN 1717 (2.5 m)	ME24930	contained in ME70686

\*) Alternatively, the Cold water adapter 3/4" to 1/4" (direct connection water hose) (art. no. ME09037) can be used.

### Example 7 - Careclave and MELAdem 53/53 C (EA)

The following installation example shows the connection of the MELAdem 53/53 C to the Careclave 618 by means of the type EA safety combination.







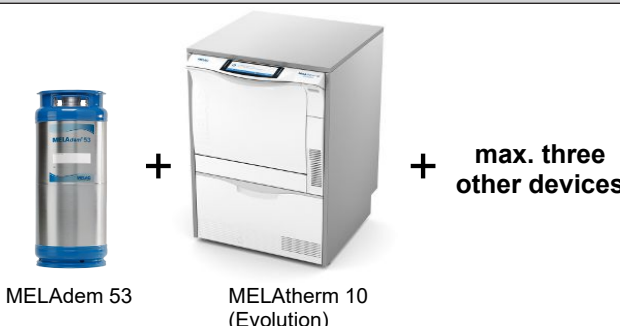
Pos.	Description	Art. no.	Note
1	Water stop (leakage water detector with shut-off valve and probe)	ME01056	optionally available to order
2	Careclave 618	--	--
2.1	Overflow funnel	--	present on device-side
2.2	Wastewater connection	--	present on device-side
2.3	Feed water connection, water treatment unit	--	present on device-side
2.4	PUR hose (black, 6/4 mm)	ME28820	present on device-side
2.5	2x Double support sleeve for an existing trap	ME37400	present on device-side
2.6	Double-chamber siphon for DN 40	ME26635	present on device-side
2.7	PTFE hose (8/6 mm)	ME39180	present on device-side
2.8	PTFE hose (8/6 mm)	ME39180	present on device-side
3	Filter for MELAdem, connection to Vacuklav/Euroklav	ME48240	optionally available to order
4*)	Water distributor for MELAdem 53	ME69005	optionally available to order
5	Wall outlet	--	on-site
6	MELAdem 53 C with 2 containers (15 l each)/ MELAdem 53 with 2 containers (20 l each)	ME01036/ ME01038	included in delivery
6.1	Connection hose (2.5 m)	ME70904	included in delivery
7	Compressed air supply	--	on-site
8	Non return (check) valve type EA	ME75300	optionally available to order
9	Water tap 3/4" with safety combination	--	on-site

\*) Alternatively, the Cold water adapter 3/4" to 1/4" (direct connection water hose) (art. no. ME09037) can be used.

## Recommended product combinations

Combinations with other MELAG products are recommended in the following.

Variant 1	Additionally required articles	Art. no.
 <p>MELAdem 53/ MELAdem 53 C</p> <p>MELAtherm 10 (Evolution)</p> <p>MELAjet</p>	<ul style="list-style-type: none"> <li>Water branch (optionally available to order)</li> </ul>	ME37241
Variant 2	Additionally required articles	Art. no.
 <p>MELAdem 53</p> <p>MELAtherm 10 (Evolution)</p> <p>MELAtherm 10 (Evolution)</p>	<ul style="list-style-type: none"> <li>2x Y-fitting for water supply with seal* or</li> <li>Water distributor for MELAdem 53</li> </ul>	ME37315 ME69005
* Is required if only one water connection is available on site.		
Variant 3	Additionally required articles	Art. no.
 <p>MELAdem 53/ MELAdem 53 C</p> <p>MELAtherm 10 (Evolution)</p> <p>Steam sterilizer (fixed water connection)*</p>	<ul style="list-style-type: none"> <li>2x Y-fitting for water supply with seal</li> <li>Water branch or</li> <li>Water distributor for MELAdem 53</li> </ul>	ME37315 ME37241 ME69005
	<ul style="list-style-type: none"> <li>PUR hose, Ø 6 mm, 5 m</li> </ul>	ME28820
* Premium-Plus-Class, Pro-Class and other steam sterilizers with a fixed water connection		
Variant 4	Additionally required articles	Art. no.
 <p>MELAdem 53/ MELAdem 53 C</p> <p>MELAtherm 10 (Evolution)</p> <p>Steam sterilizer (stand-alone)*</p>	<ul style="list-style-type: none"> <li>Water branch or</li> <li>Water distributor for MELAdem 53</li> </ul>	ME37241 ME69005
	<ul style="list-style-type: none"> <li>PUR hose, Ø 6 mm, 5 m</li> </ul>	ME28820
* Premium-Plus-Class, Pro-Class, Euroklav and other stand-alone steam sterilizers		

Variant 5		Additionally required articles	Art. no.
 <p>MELAdem 53</p> <p>MELAtherm 10 (Evolution)</p> <p><b>max. three other devices</b></p>		▪ Water distributor for MELAdem 53	ME69005
		▪ PUR hose, Ø 6 mm, 5 m	ME28820
		Depending on which devices are additionally connected, you will need other parts, e.g. water inlet distributor, Y-piece or water branch.	--

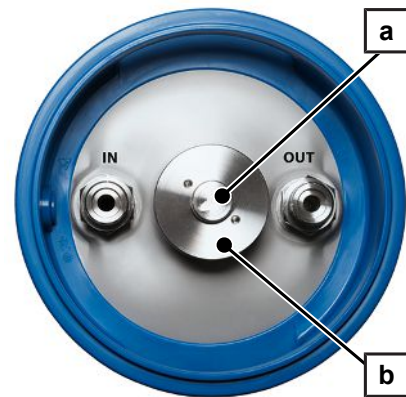
## 4 Commissioning

Comply with the following for safe handling:

- Use only original MELAG accessories or those from other suppliers authorised for use by MELAG.
- Never operate the product unattended. Unsupervised operation can result in damage to the product or the equipment and is at your own risk. In such a case, MELAG does not accept any liability. In your absence, switch off the water shut-off valve or the central water shut-off.

Remove the air from the mixed-bed resin cartridge before initial commissioning and after replacing the mixed-bed resin cartridge.

1. Turn on the cold water tap
  2. Open the degassing screw (pos. a) a little and wait until water emerges.  
**PLEASE NOTE:** When loosening the degassing screw, ensure that the screw connection opening (pos. b) does not loosen.
  3. Tighten the degassing screw as soon as the first drops of water emerge from it.
  4. Check all hose connections for leaks.
- The mixed-bed resin cartridge is ready.



## 5 Maintenance

Comply with the following for safe handling:

- Close the water intake upon detecting a leak. Check all hoses and hose connections for leaks.
- Only original MELAG spare parts may be used.

### Maintenance intervals

Interval	Measure	Components
Daily	Check for leaks and possible damage	Mixed-bed resin cartridge and its connections
	Check the ▶conductivity with a conductivity meter or a device with built-in conductivity measurement	Water quality
Every 6 months	Check for leaks, swelling, crushing, kinks or age-related embrittlement	Hoses and fittings, PUR hose of MELAjet spray pistol (if available)
Every 6 years	Replace all hoses	All hoses on the MELAdem 53/53 C and MELAjet spray pistol (if available)
As required	Regenerate the mixed-bed resin	Mixed-bed resin cartridge

### Replacing the mixed-bed resin cartridge

MELAG devices control the ▶conductivity of the ▶DI water and emit a warning message in case of bad quality. When connecting to devices (e.g. of other manufacturers) without internal conductivity measurement, the conductivity should be checked regularly with a test device.

As soon as a connected device emits a warning message due to insufficient conductivity, the mixed-bed resin cartridge must be replaced. Use the second (spare) mixed-bed resin cartridge for the replacement. You can replace the cartridge yourself, or you can get your stockist or an authorised technician to replace it.

The following must be fulfilled or present:

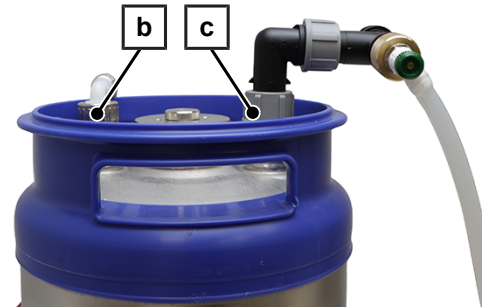
- ✓ Tray with a diameter of at least 25 cm and a capacity of at least 400 ml

1. Turn off the cold water tap.
2. Decompress the cartridge before removing the connection hoses. Hold a container under the drain valve (pos. a) or connect the drain hose to the valve. Open the drain valve.



3. Wait until no more water escapes.
4. Close the drain valve.

5. **PLEASE NOTE:** Be prepared for an outflow of residual water from the hoses.  
Unscrew the water inlet hose from the "IN" connection fitting (pos. b) and the connection components from the "OUT" DI connection fitting (pos. c).



6. Place the mixed-bed resin cartridge upside down in a small tray (approx. 400 ml) and wait until water no longer discharges from the cartridge.
7. Screw the yellow caps firmly onto the "IN" and "OUT" connection fittings.



8. Pack the empty mixed-bed resin cartridge in the MELAG transport packaging.



#### PLEASE NOTE

Use the order form for regeneration of the MELAdem 53/MELAdem 53 C to order the transport packaging.

When regenerating for the first time you receive the transport packaging free of charge.

9. Connect the new or the regenerated mixed-bed resin cartridge, see [Connection of the water treatment unit](#) [► page 9].


## Regenerating an exhausted mixed-bed resin cartridge


### Video tutorial

See also "Regeneration: MELAdem 53" (<https://www.melag.com/en/service/tutorial/washer-disinfector>).



1. Fill out the order form for regenerating the mixed-bed resin cartridge<sup>4)</sup>.
2. Send the completed form to your stockist or your depot by fax or e-mail.
3. Enclose a copy of the completed order form with the mixed-bed resin cartridge to be sent in.
  - ➔ Your stockist or your depot issues MELAG with the order for the regeneration.
4. Pack the exhausted mixed-bed resin cartridge in the MELAG transport packaging and keep it ready to be picked up.
  - ➔ The mixed-bed resin cartridge is picked up from your practice.
  - ➔ Your mixed-bed resin cartridge is filled with new mixed-bed resin and is sent to the practice.<sup>5)</sup>
5. After the mixed-bed resin cartridge has been regenerated, check the serial number on the name plate to ensure that it is the mixed-bed resin cartridge sent in by you.
6. Keep the MELAG transport packaging (a folded box, two foam inserts) in a safe and dry place. It is required to return the mixed-bed resin cartridge for regeneration.



<b>MELAG</b>		MELAG Medizintechnik GmbH & Co. KG Geneststr. 6-10, 10629 Berlin, Germany MADE IN GERMANY
Gerätetyp / Type:	MELAdem 53	
Seriennummer / Serial number:	YYYY53MDXXX-1	
Herstellungsdatum / Date of manufacture:	YYYY-MM-DD	
		www.melag.com

<sup>4)</sup> The order form can be found in the download centre of the MELAG website, under "Miscellaneous".

<sup>5)</sup> Only applies in Germany. In all other sales areas, the regenerated mixed-bed resin cartridge is returned to your stockist.

## 6 Operating pauses

---

In case of lengthy operating pauses, e.g. overnight or a weekend or during a holiday, switch off the water shut-off valve or the central water shut-off valve, otherwise the insurance cover of the building can be invalidated.

### Storage and transport

Comply with the following for safe handling:

- Store and transport the product frost-free.
- Avoid strong shocks/vibrations.
- Store the product protected from moisture.
- Damage to the housing and the inside of the product as a result of using unsuitable transport packaging. Only transport the product in its original packaging or other suitable packaging.



#### NOTICE

**Improper storage and incorrect transport can result in damage to the mixed-bed resin cartridge and mixed-bed resin fill. Long-term exceeding of the storage temperature can result in loss of the mixed-bed resin quality.**

---

Note the following:

- Empty the mixed-bed resin cartridge, see [Replacing the mixed-bed resin cartridge](#) [► page 22].
- Screw the yellow caps onto the connection fittings.
- Use the MELAG transport packaging only for transport.
- Store and transport the mixed-bed resin cartridge in a temperature of between 2-20 °C.
- In case of cool (max. 20 °C) and dry storage, the mixed-bed resin cartridge can be used up to the given date (see marker disc).

## 7 Technical data

Product type	MELAdem 53	MELAdem 53 C
<b>Product dimensions</b>		
Height	57 cm (approx. 62 cm incl. connection kit)	45 cm (approx. 49.5 cm incl. connection kit)
Diameter	24 cm (26 cm incl. water inlet hose)	24 cm (26 cm incl. water inlet hose)
Weight (incl. mixed-bed resin)	18 kg (per mixed-bed resin cartridge)	14 kg (per mixed-bed resin cartridge)
<b>Connections</b>		
Exterior connection	G 3/4"	G 3/4"
<b>Mixed-bed resin cartridge</b>		
Amount of resin (when filling) <sup>*)</sup>	20 l	15 l
Capacity per cartridge (depending on the water hardness and the conductivity of the local tap water at max. 30 µS/cm)	at 10 °dH: 2800 l at 20 °dH: 1200 l at 25 °dH: 800 l	at 10 °dH: 2100 l at 20 °dH: 960 l at 25 °dH: 650 l
Max. throughflow volume	800 l/h	800 l/h
<b>Resulting water quality</b>		
Conductivity	1-5 µS/cm	1-5 µS/cm
<b>Cold water</b>		
Admissible entry temperature of the water	5 °C to max. 40 °C	5 °C to max. 40 °C
Min. water pressure	1.5 bar	1.5 bar
Max. water pressure	10 bar	10 bar

<sup>\*)</sup> The level decreases due to mechanical influences (e.g. transport) and consumption.



### PLEASE NOTE

The indicated yield (capacity) is an approximate guide value that depends on other factors in addition to the water hardness. An upstream water softening unit system based on common salt can lead to a reduction in the capacity of the MELAdem 53/MELAdem 53 C regardless of the set initial water hardness.

## 8 Accessories and spare parts

You can obtain the specified articles and an overview of further accessories from your stockist.

Category	Article	Art. no.
Accessories and consumables	Water stop (leakage water detector with shut-off valve and probe)	ME01056
	MELAJet spray pistol	ME27300
	PUR hose, black (6/4 mm)	ME28820
	Filter for MELAdem	ME48240
	Safety combination HD with wall mount incl. hose (2.5 m)	ME70686
Connecting parts	Water branch	ME37241
	Y-fitting for water supply with seal	ME37315
	Water distributor for MELAdem 53 for parallel connection of multiple devices	ME69005
Spare parts	Wrench for connections (AF30)	ME15530
	Water inlet hose EN 1717 (2.5 m) braided stainless steel	ME24930
	Water inlet hose EN 1717 (0.8 m) braided stainless steel	ME24932
	Seal for wastewater hose (2 mm), black (connections on the mixed-bed resin cartridge)	ME52400
	Seal of EN 1717 safety combination, green (on cold water inlet hoses)	ME54920
	Rubber seal 3/4" for external water supply (3 mm thick), black (on the hose of the safety combination HD)	ME56950
	Yellow plastic cap 3/4"	ME58140
	T-piece with seal, outlet side	ME70902
	Seal (8 mm) for T-piece/pipe elbow	ME70903
	Connection hose (2.5 m)	ME70904
	Pipe elbow with seal, outlet side	ME70906

## Glossary

**Conductivity**

Conductivity is the ability of a conductive chemical substance or mixture of substances to conduct or transfer energy or other substances or particles in space.

**Demineralised water**

Demineralised water does not contain minerals that are found in normal spring or tap water. It is obtained from tap water by ion exchange and used as feed water.

**DI water**

Demineralised water (DI water) is water (H<sub>2</sub>O) without the salts found in normal spring and tap water, which are dissolved as anions and cations.

**EN 1717**

Standard for "Protection against pollution of potable water installations and general requirements of devices to prevent pollution by back flow"

**Reprocessing**

Reprocessing is a measure to prepare a new or used healthcare device for its intended purpose. Reprocessing includes cleaning, disinfection, sterilization and similar procedures.

**Standard-compliant**

Standard-compliant describes conformity with all relevant standards.





## MELAG Medizintechnik GmbH & Co. KG

Geneststraße 6-10  
10829 Berlin  
Germany

Email: [info@melag.com](mailto:info@melag.com)  
Web: [www.melag.com](http://www.melag.com)

Original instructions

Responsible for content: MELAG Medizintechnik GmbH & Co. KG  
We reserve the right to technical alterations

Your stockist