MELAG
competence in hygiene

User Manual

MELAdem® 53
MELAdem® 53 C

lon 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

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.

Symbols used

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

Disposal

MELAG products are synonymous for long-term quality. When you eventually need to decommission your MELAG product after many years of operation, dispose of it and any spare parts that are no longer used, such as seals, 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.

Dispose of spare parts that are no longer used, e.g. seals, properly.

2 Safety

When using the product, comply with the following safety instructions as well as those contained in subsequent chapters. 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.

Setup, installation and commissioning

- 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.

Storage and transport

- 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.

Daily operation

- 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.

Leaks

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

3 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 23] 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

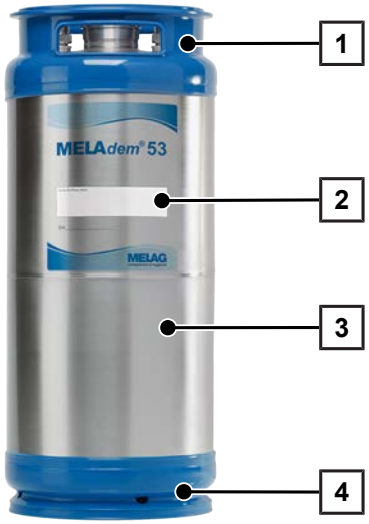
Please check the scope of delivery before using the product.

Standard scope of delivery

- 2x MELAdem 53/MELAdem 53 C mixed-bed resin cartridge
- User manual
- Record of installation and setup
- Warranty certificate
- Pipe elbow with drain valve for DI water connection
- 2x black rubber seal, 2 mm thick
- Tap water supply hose EN 1717, 2.5 m with 180° elbow and green flat seal
- Safety combination HD according to EN 1717 for wall mouting and green flat seal
- Tap water supply hose EN 1717, 0.8 m
- Sealable bag with cable tie
- Y-fitting for water supply with seal (3 mm, black)
- Wrench for connections (AF30)
- 2x sheet metal screw

Views

View from the front



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 pipe of the local drinking water supply (cold water IN)
6 Screw connection opening
7 Degassing screw*)
8 Pipe elbow connection for ▸DI water (pure water OUT)

*) made of POM (black) if applicable

4 Setup and installation

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.

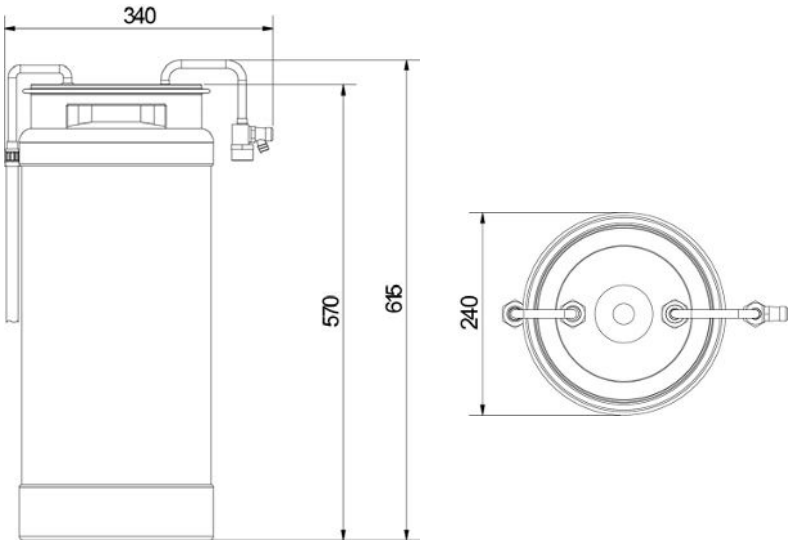
Space requirements

The space required for the mixed-bed resin cartridge equals the dimensions plus at least 25 cm for the HD safety combination in accordance with ▸EN 1717 and clear access for the hose connections. Place the mixed-bed resin cartridge preferably in an adjacent base cabinet if the washer-disinfector or the steam sterilizer is set up as a built-in device.

PLEASE NOTE

A clear space of 25 cm is required above the mixed-bed resin cartridge for installation of a safety combination.

View from the front/above



Cold water connection

PLEASE NOTE

MELAG recommends connecting the water treatment unit directly to the drinking water. 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 drinking water has been contaminated by the water installation. This includes both the domestic installation and the entire upstream peripherals.
- Arrange for the actual drinking 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

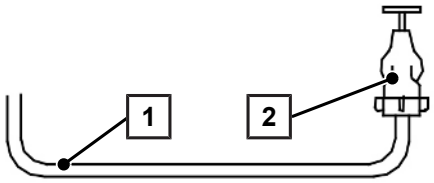
To ensure ▸standard-compliant connection of the mixed-bed resin cartridge with anti-pollution check valve (backflow preventer) and anti-vacuum valve, MELAG recommends one of the two alternative connections described in the following.

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

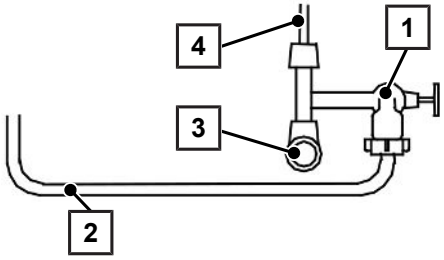
If a separate water connection (nominal size DN15 with 1/2" collar) is present or installed, a water tap with integrated safety combination (a check valve and an anti-vacuum valve) is required.



1 Cold water inlet hose
2 Water tap 3/4” with safety combination (art. no. ME37310)

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 (check valve and anti-vacuum valve) 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

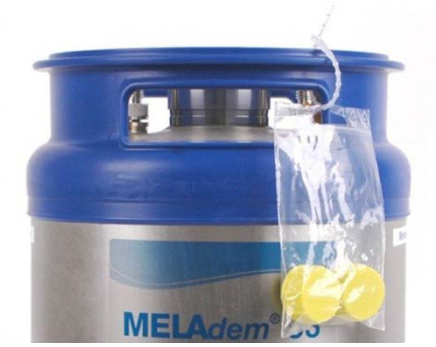
Consumers (devices) must be connected to the tap water system according to ▸EN 1717 so that the tap water system is protected from pollution. To this end, fit a safety combination HD in accordance with EN 1717 Part 4 to the connection point.

The safety combination HD should consist of a check valve and anti-vacuum valve.

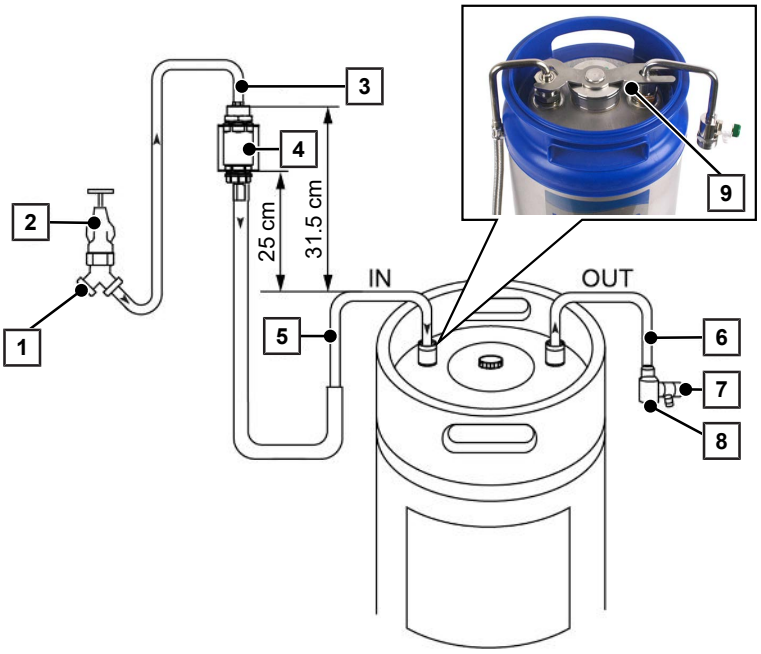
Connection of the water treatment unit

1. Unscrew the yellow caps from the connection fittings before you connect the hoses.

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



Connect the unit as shown in the connection diagram



1 Cold water inlet hose connection to washer-disinfector/steam sterilizer/ Careclave
2 Water tap (on site) with integrated safety combination
3 Elbow pipe with water inlet hose
4 Safety combination HD according to EN 1717 for wall mouting
5 Tap water supply hose EN 1717, 0.8 m (IN) with pipe elbow
6 Pipe elbow for ▸DI water connection (OUT)
7 Drain valve for mixed-bed resin cartridge pressure relief
8 Connection of DI water inlet hose to the washer-disinfector/steam sterilizer/ Careclave
9 Wrench for connections

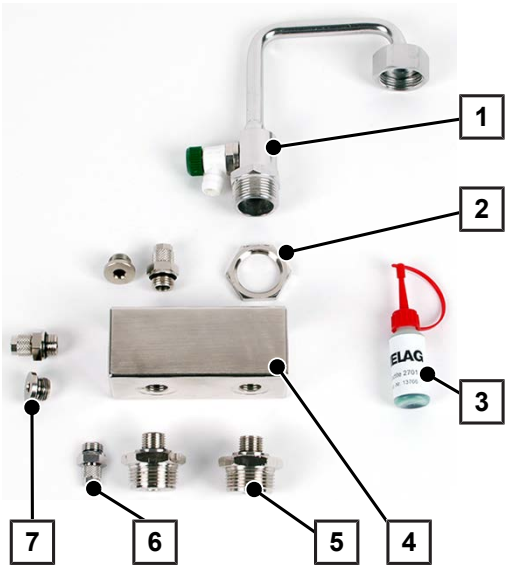
1. Mount the safety combination HD (pos. 4) on the wall 25 cm above the mixed-bed resin cartridge in accordance with EN 1717.
2. Connect the pipe elbow of the water inlet hose (pos. 3) to the green flat seal at the top of the safety combination HD (pos. 4).
3. Connect the other end to the tap water system or to the Y-piece supplied. Use the wrench for connections.
4. Connect the water inlet hose with pipe elbow (pos. 5) to the green flat seal at the bottom of the safety combination HD (pos. 4).
5. Connect the water inlet hose with pipe elbow (pos. 5), with the 2 mm thick black rubber seal, to the “IN” connection fitting of the mixed-bed resin cartridge. Use the wrench for connections.
6. Connect the pipe elbow for DI water (pos. 6), with the 2 mm thick black rubber seal, to the “OUT” connection fitting. Use the wrench for connections.
7. Connect the DI water inlet hose of the washer-disinfector/steam sterilizer/Careclave to the mounted pipe elbow for DI water (pos. 6).

Water distributor for connecting further devices

MELAG recommends the water distributor (art. no. ME69005) for connection of multiple devices. The water distributor is connected to the pipe elbow on the output side of the mixed-bed resin cartridge. An additional washer-disinfector, e.g. a MELAtherm 10 and a maximum of three other (combined) steam sterilizers can be optionally connected to the unused connections.

The following tools are required for the connection:

- Spanners for connection across-flat sizes 16 mm, 27 mm, 30 mm, 32 mm
- Allen key 6 mm

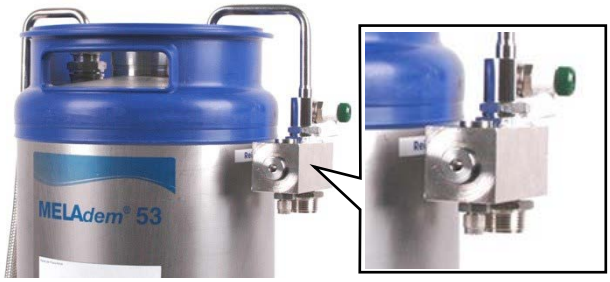


1 Pipe elbow with drain valve for ▸DI water (included in the scope of delivery of the mixed-bed resin cartridge)
2 Hexagonal nut
3 Loctite 2701 threadlocker
4 Distributor block
5 Reducing nipple G 3/4“ – G 1/4“ for connection to a washer-disinfector
6 Straight fitting with O-ring, for Ø 6 mm PUR hose for connection of a MELAG steam sterilizer or the MELAjet spray pistol
7 Screw plug

Installing the water distributor

Before installation, the water distributor must be mounted according to the number of devices available in the practice.

1. Screw the hexagonal nut (pos. 2) onto the pipe elbow (pos. 1).
2. Apply Loctite 2701 threadlocker (pos. 3) on at least one thread of the pipe elbow (pos. 1).
3. Screw the pipe elbow (pos. 1) into the distributor block (pos. 4) and align according to the circumstances on site.
4. Use the hexagonal nut (pos. 2) to lock the screwing of the pipe elbow (pos. 1). The full curing time of the Loctite 2701 threadlocker until commissioning of the mixed-bed resin cartridge is at least 10 min.
5. Select the connection fittings (pos. 5 and 6) according to the device to be connected to the water distributor.
6. Close off unused openings with a screw plug (pos. 7).
7. Then check all hose connections for leaks.

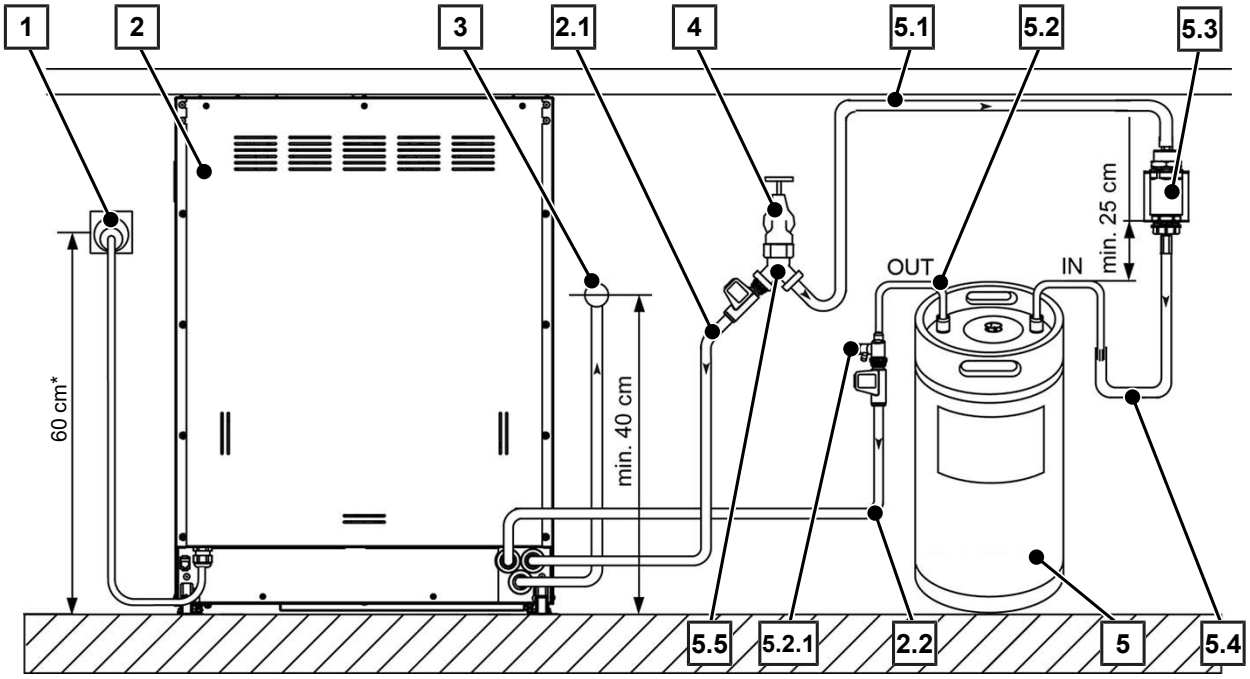


Installation example with multiple devices, see Example 5 - MELAtherm 10, two steam sterilizers and MELAdem 53/53 C [▸ page 17].

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.

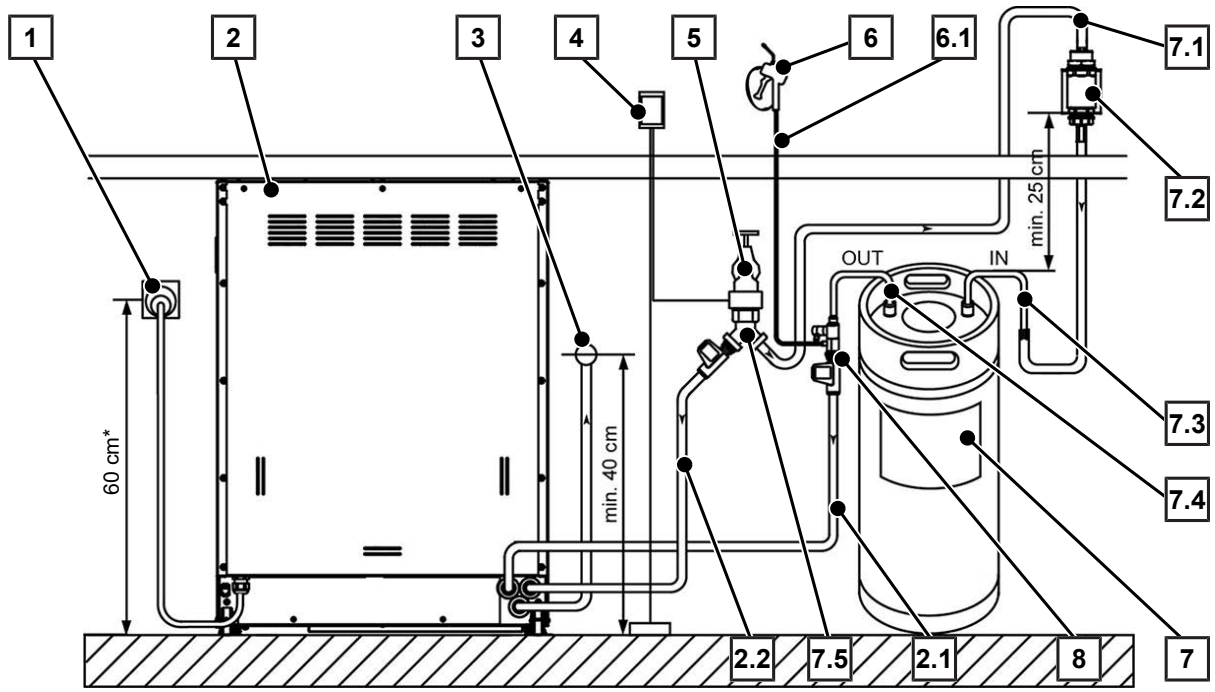


* recommended

Pos.	Description	Art. no.	contained in
1	Mains connection (on site)	--	--
2	MELAtherm 10/MELAtherm 10 Evolution	--	--
2.1	Tap water supply hose 2 m, cold water	ME69530	MELAtherm
2.2	Aqua dem water supply hose 2 m, DI water	ME69540	MELAtherm
3	Wastewater connection (on site)	--	--
4	Water tap (on site)	--	--
5	MELAdem 53/MELAdem 53 C	ME01038/ME01036	--
5.1	Tap water supply hose EN 1717, 2.5 m	ME24930	ME01038/ME01036
5.2	Pipe elbow with drain valve	ME70405	ME01038/ME01036
5.2.1	Drain valve for pressure relief	--	ME70405
5.3	Safety combination HD according to EN 1717 for wall mouting	ME70685	ME01038/ME01036
5.4	Tap water supply hose EN 1717, 0.8 m	ME24932	ME01038/ME01036
5.5	Y-fitting for water supply with seal	ME37315	ME01038/ME01036

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.

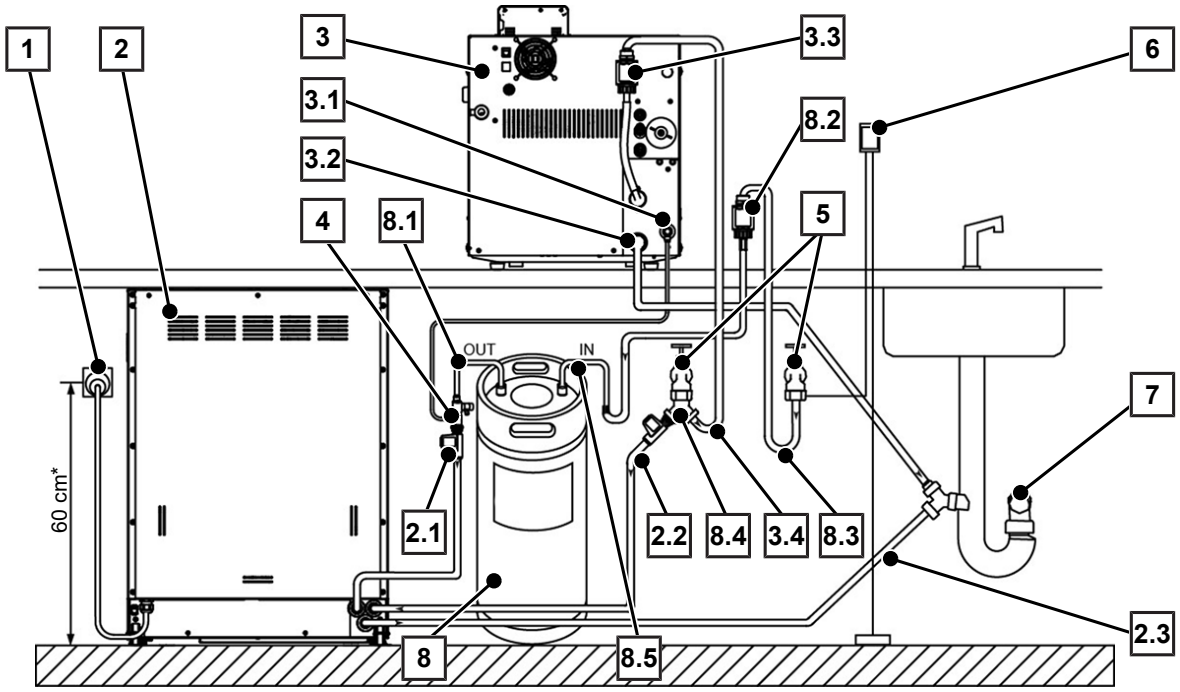


* recommended

Pos.	Description	Art. no.	contained in
1	Mains connection (on site)	--	--
2	MELAtherm 10/MELAtherm 10 Evolution	--	--
2.1	Aqua dem water supply hose 2 m, DI water	ME69540	MELAtherm
2.2	Tap water supply hose 2 m, cold water	ME69530	MELAtherm
3	Wastewater connection (on site)	--	--
4	Water stop valve with optional cut-off valve and sensor	ME01056	--
5	Water tap (on site)	--	--
6	MELAjet spray pistol	ME27300	--
6.1	Hose PUR (black) 6/4 mm	ME28820	ME27300
7	MELAdem 53/MELAdem 53 C	ME01038/ME01036	--
7.1	Tap water supply hose EN 1717, 2.5 m	ME24930	ME01038/ME01036
7.2	Safety combination HD according to EN 1717 for wall mouting	ME70685	ME01038/ME01036
7.3	Tap water supply hose EN 1717, 0.8 m	ME24932	ME01038/ME01036
7.4	Pipe elbow with drain valve	ME70405	ME01038/ME01036
7.5	Y-fitting for water supply with seal	ME37315	ME01038/ME01036
8	Water branch	ME37241	--

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*[1].



* recommended

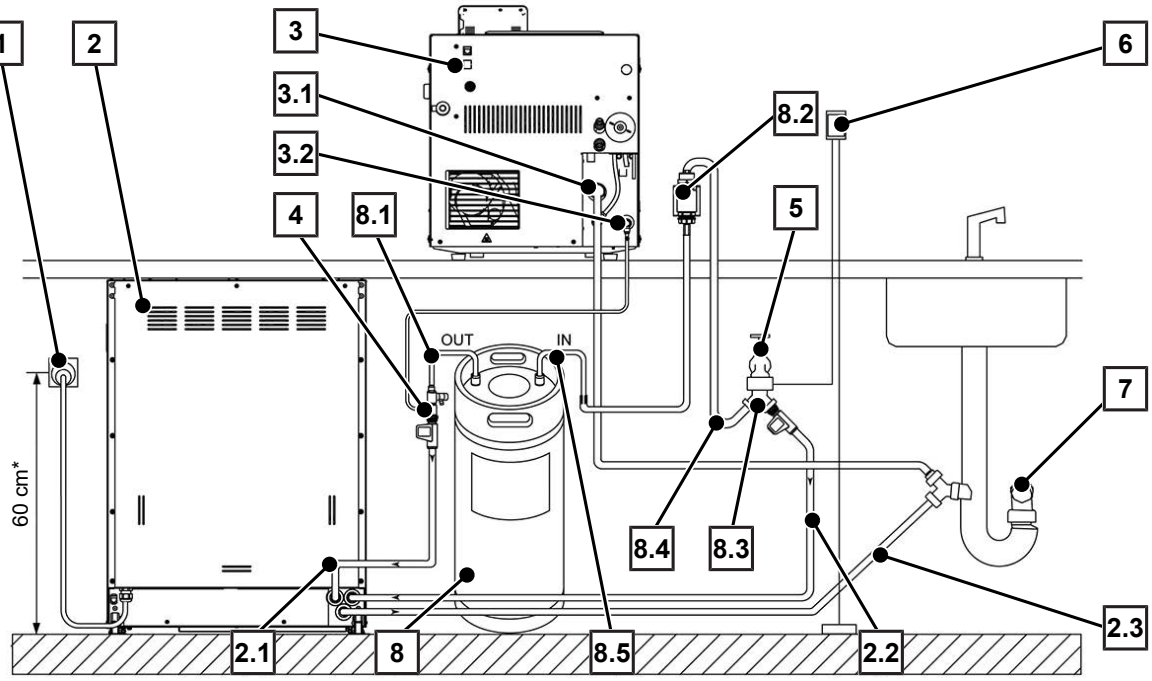
Pos.	Description	Art. no.	contained in
1	Mains connection (on site)	--	--
2	MELAtherm 10/MELAtherm 10 Evolution	--	--
2.1	Aqua dem water supply hose 2 m, DI water	ME69540	MELAtherm
2.2	Tap water supply hose 2 m, cold water	ME69530	MELAtherm
2.3	Water outlet hose, 2 m	ME60580	MELAtherm
3	Steam sterilizer with fixed water connection	--	--
3.1	Feed water connection	--	--
3.2	Cooling water outflow	--	--
3.3	Safety combination EN 1717 incl. holder	ME82375	Steam sterilizer
3.4	Tap water supply hose EN 1717, 2.5 m	ME24930	Steam sterilizer
4	Water branch	ME37241	--
5	Water tap (on site)	--	--
6	Water stop valve with optional cut-off valve and sensor	ME01056	--
7	Wall outlet (on site)	--	--
8	MELAdem 53/MELAdem 53 C	ME01038/ME01036	--
8.1	Pipe elbow with drain valve	ME70405	ME01038/ME01036
8.2	Safety combination HD according to EN 1717 for wall mouting	ME70685	ME01038/ME01036
8.3	Tap water supply hose EN 1717, 2.5 m	ME24930	ME01038/ME01036
8.4	Y-fitting for water supply with seal	ME37315	ME01038/ME01036
8.5	Tap water supply hose EN 1717, 0.8 m	ME24932	ME01038/ME01036

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

[1] 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*[2)].



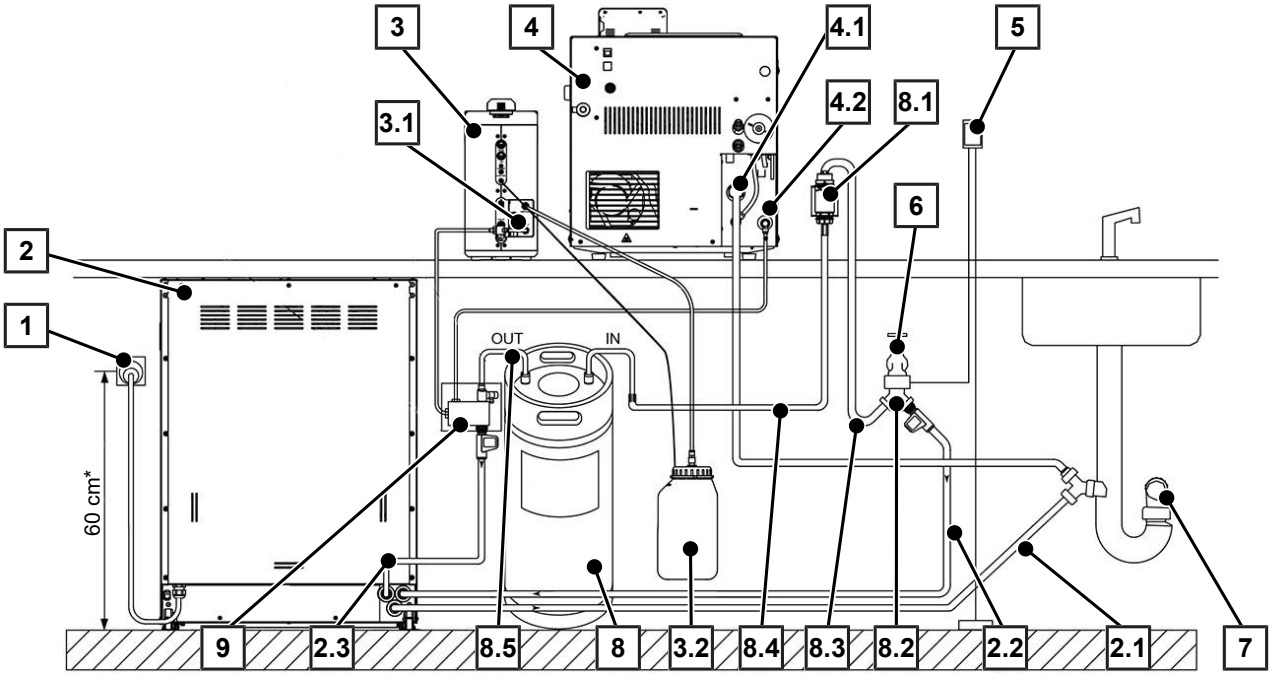
* recommended

Pos.	Description	Art. no.	contained in
1	Mains connection (on site)	--	--
2	MELAtherm 10/MELAtherm 10 Evolution	--	--
2.1	Aqua dem water supply hose 2 m, DI water	ME69540	MELAtherm
2.2	Tap water supply hose 2 m, cold water	ME69530	MELAtherm
2.3	Water outlet hose, 2 m	ME60580	MELAtherm
3	Steam sterilizer stand-alone	--	--
3.1	One-way outlet	--	--
3.2	Feed water connection	--	--
4	Water branch	ME37241	--
5	Water tap (on site)	--	--
6	Water stop valve with optional cut-off valve and sensor	ME01056	--
7	Wall outlet (on site)	--	--
8	MELAdem 53/MELAdem 53 C	ME01038/ME01036	--
8.1	Pipe elbow with drain valve	ME70405	ME01038/ME01036
8.2	Safety combination HD according to EN 1717 for wall mouting	ME70685	ME01038/ME01036
8.3	Y-fitting for water supply with seal	ME37315	ME01038/ME01036
8.4	Tap water supply hose EN 1717, 2.5 m	ME24930	ME01038/ME01036
8.5	Tap water supply hose EN 1717, 0.8 m	ME24932	ME01038/ME01036

[2)] 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*[3)] and MELAquick 12+/12+ p.



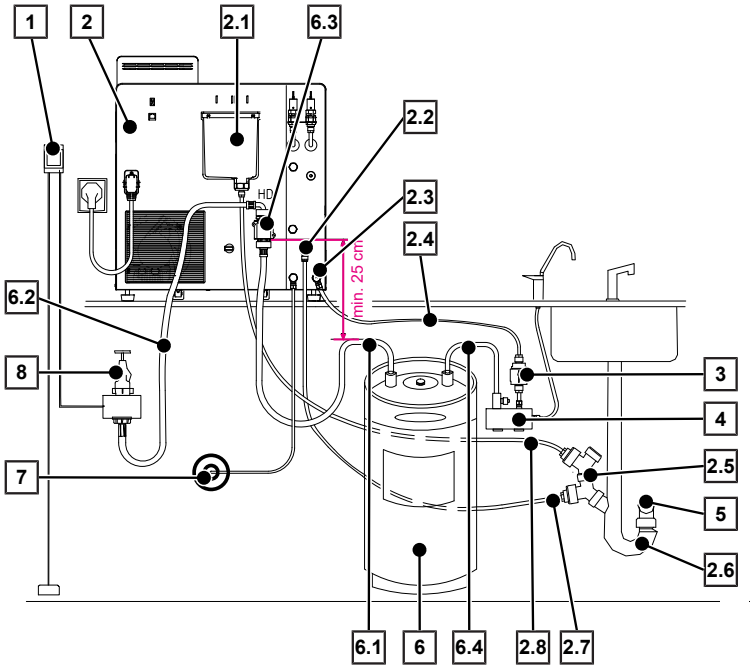
* recommended

Pos.	Description	Art. no.	contained in
1	Mains connection (on site)	--	--
2	MELAtherm 10/MELAtherm 10 Evolution	--	--
2.1	Water outlet hose, 2 m	ME60580	MELAtherm
2.2	Tap water supply hose 2 m, cold water	ME69530	MELAtherm
2.3	Aqua dem water supply hose 2 m, DI water	ME69540	MELAtherm
3	MELAquick 12+/12+ p	--	--
3.1	Feed water connection	--	MELAquick
3.2	Wastewater container, complete	ME74215	MELAquick
4	Vacuklav 41 B+/43 B+ *Evolution*	--	--
4.1	One-way outlet	--	--
4.2	Feed water connection	--	--
5	Water stop valve with optional cut-off valve and sensor	ME01056	--
6	Water tap (on site)	--	--
7	Wall outlet (on site)	--	--
8	MELAdem 53/MELAdem 53 C	ME01038/ME01036	--
8.1	Safety combination HD according to EN 1717 for wall mouting	ME70685	ME01038/ME01036
8.2	Y-fitting for water supply with seal	ME37315	ME01038/ME01036
8.3	Tap water supply hose EN 1717, 2.5 m	ME24930	ME01038/ME01036
8.4	Tap water supply hose EN 1717, 0.8 m	ME24932	ME01038/ME01036
8.5	Pipe elbow with drain valve	ME70405	ME01038/ME01036
9	Water distributor for MELAdem 53	ME69005	--

[3)] 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)

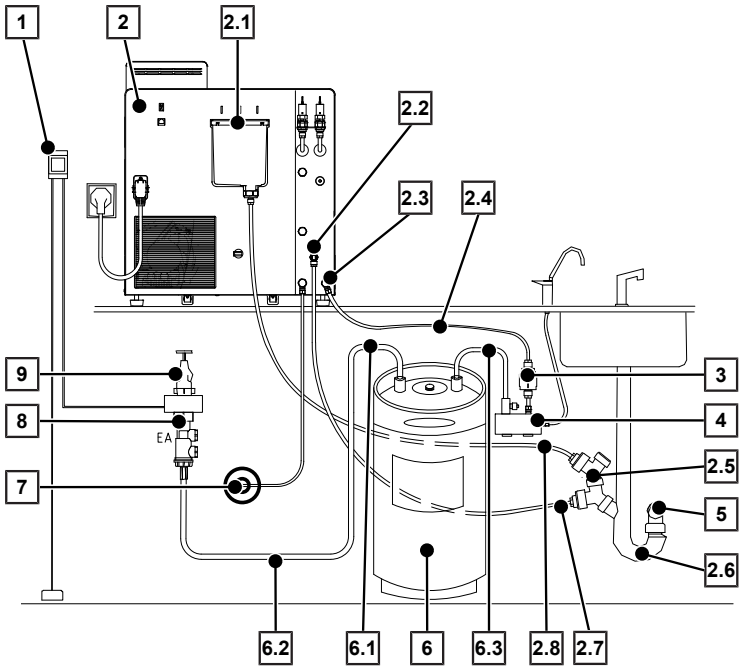
The following installation example shows the connection of the MELAdem 53/53 C to the Careclave 618 by means of the type HD safety combination.



Pos.	Description	Art. no.	contained in
1	Water stop valve with optional cut-off valve and sensor	ME01056	--
2	Careclave 618	--	--
2.1	Overflow funnel	--	Careclave
2.2	Wastewater connection	--	Careclave
2.3	Feed water connection, water treatment unit	--	Careclave
2.4	Hose PUR (black, 6/4 mm)	ME28820	Careclave
2.5	2x Double support sleeve for an existing trap	ME37400	Careclave
2.6	Double-chamber siphon	ME26635	Careclave
2.7	Hose PTFE (8/6 mm)	ME39180	Careclave
2.8	Hose PTFE (8/6 mm)	ME39180	Careclave
3	Feed water filter for MELAdem	ME48240	--
4	Water distributor for MELAdem 53	ME69005	--
	Cold water adapter 3/4" to 1/4" (direct connection water hose)	ME09037	Careclave
5	Wall outlet (on site)	--	--
6	MELAdem 53/MELAdem 53 C	ME01038/ME01036	--
6.1	Tap water supply hose EN 1717, 0.8 m	ME24932	ME01038/ME01036
6.2	Tap water supply hose EN 1717, 2.5 m	ME24930	ME01038/ME01036
6.3	Safety combination HD according to EN 1717 for wall mouting	ME70685	ME01038/ME01036
6.4	Pipe elbow with drain valve	ME70405	ME01038/ME01036
7	Compressed air supply (on site)	--	--
8	Water tap 3/4” with safety combination	ME37310	--

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.	contained in
1	Water stop valve with optional cut-off valve and sensor	ME01056	--
2	Careclave 618	--	--
2.1	Overflow funnel	--	Careclave
2.2	Wastewater connection	--	Careclave
2.3	Feed water connection, water treatment unit	--	Careclave
2.4	Hose PUR (black, 6/4 mm)	ME28820	Careclave
2.5	2x Double support sleeve for an existing trap	ME37400	Careclave
2.6	Double-chamber siphon	ME26635	Careclave
2.7	Hose PTFE (8/6 mm)	ME39180	Careclave
2.8	Hose PTFE (8/6 mm)	ME39180	Careclave
3	Feed water filter for MELAdem	ME48240	--
4	Water distributor for MELAdem 53	ME69005	--
	Cold water adapter 3/4" to 1/4" (direct connection water hose)	ME09037	Careclave
5	Wall outlet (on site)	--	--
6	MELAdem 53/MELAdem 53 C	ME01038/ME01036	--
6.1	Tap water supply hose EN 1717, 0.8 m	ME24932	ME01038/ME01036
6.2	Tap water supply hose EN 1717, 2.5 m	ME24930	ME01038/ME01036
6.3	Pipe elbow with drain valve	ME70405	ME01038/ME01036
7	Compressed air supply (on site)	--	--
8	Return flow inhibitor type EA	ME75300	--
9	Water tap 3/4” with safety combination	ME37310	--

Recommended product combinations

Combinations with other MELAG products are recommended in the following.

Method 1	Additionally required articles	Art. no.
 MELAdem 53/ MELAdem 53 C + MELAtherm 10 (Evolution) + MELAjet	▪ Water branch	ME37241

Method 2	Additionally required articles	Art. no.
 MELAdem 53 + MELAtherm 10 (Evolution) + MELAtherm 10 (Evolution)	▪ 2x Y-fitting for water supply with seal* or	ME37315
	▪ Water distributor for MELAdem 53	ME69005
* Is required if only one water connection is available on site.		

Method 3	Additionally required articles	Art. no.
 MELAdem 53/ MELAdem 53 C + MELAtherm 10 (Evolution) + Steam sterilizer (fixed water connection)*	▪ 2x Y-fitting for water supply with seal	ME37315
	▪ Water branch or	ME37241
	▪ Water distributor for MELAdem 53	ME69005
	▪ Hose PUR, Ø 6 mm, 5 m	ME28820
* Premium-Class, Pro-Class and other steam sterilizers with a fixed water connection		

Method 4	Additionally required articles	Art. no.
 MELAdem 53/ MELAdem 53 C + MELAtherm 10 (Evolution) + Steam sterilizer (stand-alone)*	▪ Water branch or	ME37241
	▪ Water distributor for MELAdem 53	ME69005
	▪ Hose PUR, Ø 6 mm, 5 m	ME28820
* Premium-Class, Pro-Class, Euroklav and other stand-alone steam sterilizers		

Method 5	Additionally required articles	Art. no.
 +  + **max. three other devices** MELAdem 53 MELAtherm 10 (Evolution)	▪ Water distributor for MELAdem 53	ME69005
	▪ Hose PUR, 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.	--

5 Commissioning

NOTICE

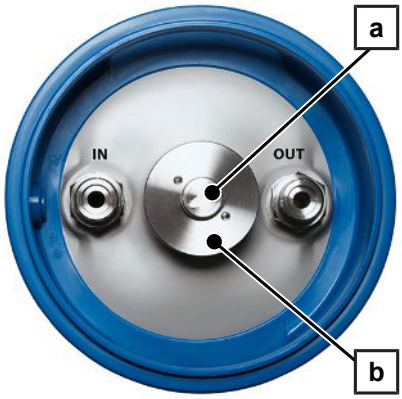
Unsupervised operation of water consuming devices, including this water treatment unit follows at the operator's risk. Do not operate the water treatment unit for a long period unsupervised, e.g. over night. This could void the insurance cover for the building. MELAG accepts no liability for any damage that may occur due to unsupervised operation.

- In your absence, switch off the water shut-off valve or the central water shut-off.

Before the initial commissioning and after replacing the mixed-bed resin cartridge, vent 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.



6 Maintenance

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, kings 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 check 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 MELAG customer service to replace it.

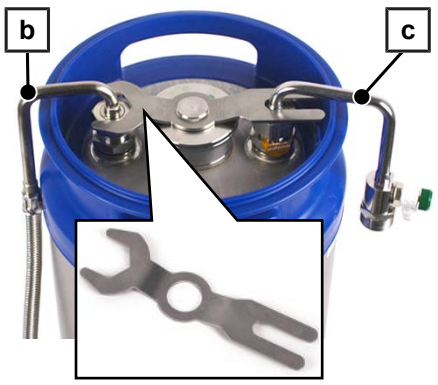
1. Turn off the cold water tap.

2. Decompress the cartridge before removing the connection hoses. To do so, hold a small receptacle under the drain valve (pos. a) on the DI water “OUT” pipe elbow and open the valve.

3. Wait until water is no longer discharged from the drain valve.

4. Re-close the drain valve.

5. Unscrew the pipe elbow of the cold water “IN” inlet hose (pos. b) and the pipe elbow of the DI water “OUT” connection fitting (pos. c) using the enclosed wrench (for connections). Be prepared for an outflow of residual water from the hoses.



6. Place the mixed-bed resin cartridge upside down in a small tray (capacity approx. 400 ml) and wait until water no longer discharges from the mixed-bed resin cartridge.

7. Screw the yellow caps tightly on the connection fittings of the cold water pipe “IN” and the DI water “OUT” (pure water OUT) connection fitting.

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.

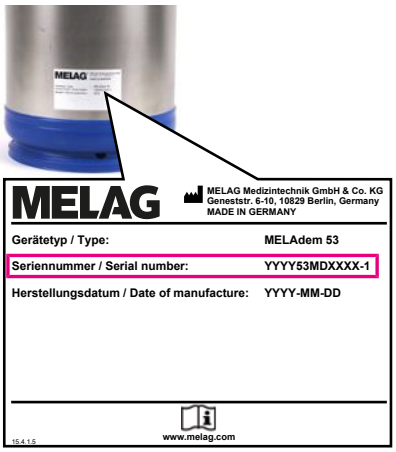
9. Connect the new or the regenerated mixed-bed resin cartridge, see Connection of the water treatment unit [▸ page 10].

Regenerating an exhausted mixed-bed resin cartridge

Video tutorial

See also “Regeneration: MELAdem 53”.

1. Fill out the order form for regeneration of the mixed-bed resin cartridge.[4)]
2. Send the completed form to your stockist or your depot by fax or email.
3. Enclose a copy of the completed 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.[5)]
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.



[4)] The order form can be found in the download centre of the MELAG website, under manufacturer recommendation.
[5)] Only applies in Germany. In all other sales areas, the regenerated mixed-bed resin cartridge is returned to your stockist.

7 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

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 23].
- 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).
- Protect the mixed-bed resin cartridge (contains water) against frost.

8 Technical data

Product type	MELAdem 53	MELAdem 53 C
Product dimensions		
Height	57 cm (approx. 61.5 cm incl. pipe elbow)	45 cm (approx. 49 cm incl. pipe elbow)
Diameter	24 cm	24 cm
Weight (incl. mixed-bed resin)	18 kg (per mixed-bed resin cartridge)	14 kg (per mixed-bed resin cartridge)
Connections		
Exterior connection	G 3/4“	G 3/4“
Mixed-bed resin cartridge		
Amount of resin	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
Resulting water quality		
Conductivity of the distilled water	1-5 µS/cm	1-5 µS/cm
Cold water		
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

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.

9 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 valve	ME01056
	MELAjet spray pistol	ME27300
	Hose PUR (black) 6/4 mm (10 m)	ME28820
	Filter for MELAdem	ME48240
Connecting parts	Water branch	ME37241
	Water tap 3/4” with safety combination	ME37310
	Y-fitting for water supply with seal	ME37315
	Additional water tap with unit combination for mounting on existing angle valve	ME58130
	Water distributor for MELAdem 53 for parallel connection of multiple devices	ME69005
Spare parts	Wrench for connections AF30	ME15530
	Tap water supply hose EN 1717, 2.5 m	ME24930
	Tap water supply hose EN 1717, 0.8 m	ME24932
	Seal for wastewater hose, 2 mm thick, 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
	Pipe elbow with drain valve (G3/4“)	ME70405

Glossary

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
Water without the minerals usually found in normal spring or tap water; is produced through ion exchange of normal tap water. It is used here as feed water.

DI water
Demineralised water (DI water) is water (H2O) without the salts found in normal spring and tap water, which are dissolved as anions and cations.

EN 1717
Standard - protection of drinking water from contamination in drinking water installations and general requirements for safety devices to prevent drinking water contamination through backflow

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
Satisfies all relevant standards

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Original instructions

Your stockist

BA_MELAdem53_53C_EN.pdf | Rev. 10 - 22/2009 | Modification date: 2022-05-20