Dansensor®
LeakPointer® H_2O
User Guide EN

AMETEK® | mocon®

P/N 390225-C
11/2021

This blank page has been inserted to enable double sided printing of the document!

Dansensor®
LeakPointer® H_2O
User Guide

EN

Published by:

MOCON Europe A/S
Rønnedevej 18
4100 Ringsted, Denmark
Tel +45 57 66 00 88
info.dk.mocon@ametek.com
www.ametekmocon.com

P/N 390225-C
11/2021

Table of Contents

P/N 390225-C
11/2021

1. Introduction

Important!

Safety and use

- Prior to using the equipment, it is assumed that it has been properly installed and configured by an authorised technician.
- It is the responsibility of the owner and operator/s of the equipment, that the maintenance, checks, and test procedures are performed by trained users.
- The manufacturer cannot be held responsible for any damage caused by incorrect use and maintenance of this machine.

About this Manual

Intended Use of this Manual

- This manual describes the common use and maintenance procedures of the **Dansensor® LeakPointer H_2O** device.
  It is intended for the daily users and should be kept with the equipment for reference at all times.

Reservations

- This manual was written and illustrated using the best possible information available at the time of publication.
- Any differences between this manual and the equipment reflect improvements introduced after the publication of the manual.
- Changes, technical inaccuracies and typographic errors will be corrected in subsequent editions.
- As a part of our policy of continuous improvement, we reserve the right to alter design and specifications without further notice.

P/N 390225-C
11/2021

Notes, cautions, warnings and tips!

Throughout the manual notes, cautions, and warnings are indicated with various icons and written in bold like the example below:

CAUTION! Never use hard tools or abrasive materials when cleaning any part of the device.

Explanation

NOTE! The operator should observe and/or act according to the information in order to obtain the best possible function of the equipment.

CAUTION! The operator must observe and/or act according to the information in order to avoid any mechanical or electrical damage to the equipment.

WARNING! The operator must observe and/or act according to the information in order to avoid any personnel injury.

Tips and recommendations

Tips, recommendations and “best practice” advises are indicated as shown in the example below:

TIP! Try using a screwdriver to release the cover.

Safety Instructions

Personnel

- Personnel operating the device must be familiar with all aspects of its operation.
- Personnel maintaining the machine must be proficient in its maintenance.
- Personnel operating or maintaining the machine must not have hair, cloth or other things hanging loosely on them. This can get tangled in the machine.
- Such personnel should review the following precautions to promote safety awareness.
- The machine should only be operated and maintained by personnel of normal height (150 to 210 cm) and sound of mind and body.

General

- Always refer to the manual before operating or maintaining the equipment.
- Observe all WARNINGS, CAUTIONS and NOTES.
- In case of technical problems please contact your service provider.
- Do not expose the equipment to heavy moisture or heat and keep it away from direct sunlight.
- Never remove safety devices. This may only be done by authorised personnel during service. This concerns the following parts:
  - Silencer on the vacuum release valve.
- The device must be installed by authorised personnel.
- The device should only be installed inside a factory or test environment.
- Never install the equipment in explosive environments.
- Always use correct fittings and hoses when connecting the air pressure.
- Provide adequate space around the equipment for operators to walk around the unit.
- It is the responsibility of the owner and operator(s) of the equipment, that the installation is made in accordance with local rules and regulations.
- The manufacturer cannot be held responsible for any damage caused by incorrect installation and maintenance of this equipment.

Operation and maintenance

CAUTION! At any sign of damage to the water chamber (tub or lid), they must be replaced immediately! Inspect water chamber (tub and lid) daily!

- Be sure to turn of air supply before performing any cleaning or maintenance
- When operating or maintaining the equipment always obey the relevant rules and regulations for workers safety.
- Trained service personal only are allowed perform service and tune the machine.
- Replace damaged chambers and lids immediately.
- Replace damaged gas springs immediately.
- Replace damaged hoses immediately.
- Never block gas outlets.
- No one shall replace parts or redesign anything on the device without permission from MOCON Europe A/S.

General description

The **Dansensor® LeakPointer H_2O** can be used to detect leaks in flexible, semi-rigid or rigid packages by means of vacuum.
As the package is tested immersed in water, any air bubbles will also reveal the location of the leak.

This type of leak testing does not require for the package to contain any type of MAP gas (e.g. CO_2).

Vacuum is created by a built-in vacuum ejector and it is thus necessary to connect compressed air to the unit.

2. Setting Up

Positioning

Place the device on a stable and even surface and ensure that the height allows for convenient operation as well as easy loading and removal of test samples.

By default the drain outlet 1 faces forward, but the tub 2 can easily be turned around so that the drain outlet faces backwards - see *"Fill/drain hose" on page 10* for details.
If the unit is placed against a wall, it is recommended to keep the drain outlet facing forwards.

When turning the tub around, it may be necessary to adjust the tub positioning sleeves - see *"Adjusting the tub positioning sleeves" on page 25* for details.

TIP! If the unit is placed on a trolley, it can be easily moved around and rotated to access the drain outlet 1.

Connections

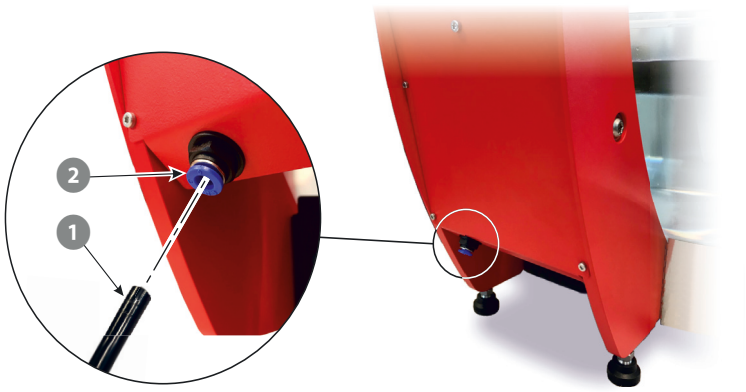
Fill/drain hose

Connect the drain hose 1 to the drain outlet 2.

The tub 3 can be turned so that the drain outlet 2 can be located through either the front or back of the device. When the drain outlet is located at the back, you should use the optional adapter hose 4 between the outlet 2 and the drain hose 1 - see *"Options/Accessories" on page 32* for details.

The hoses are connected by means of quick couplings. To assemble or disassemble a quick coupling, the locking ring 5 must be pulled backwards, after which the coupling can be either disassembled or assembled.

Compressed air



NOTE! The compressed air supply hose is not included.

Connect the compressed air supply hose 1 to the inlet 2 at the back of the unit.

Make sure

- that the hose is pushed into the fitting as far as it goes.
- to check the connection by pulling the hose slightly outwards.
- that the hose and the compressed air complies with the specifications in *"6. Technical Data" on page 30*.

CAUTION! When connecting the hose, make sure that it can not be squeezed or blocked in any way.

CAUTION! If the specified maximum pressure is exceeded, there is a danger of bursting of tubing and other components.

NOTE! If the supplied air pressure is outside the specified range, the ejector efficiency will be reduced.

Pressure regulator/filter

We recommend to use a pressure regulator/filter unit which ensures that the air quality fulfills the required specifications.

NOTE! Make sure that the hose between the device and the pressure regulator is max. 1m, otherwise you must compensate for the pressure drop in the hose.

NOTE! A regulator/filter unit does not ensure that the air is dry and therefore it is recommended to install a type of air-drying unit as well.

Filling of water

General

- Water temperature should be max. 50°C.
- Add 1-2 ml non-alkali detergent to the water, to conserve it and make it softer.
- If local water is very calcareous, we recommend to use de-mineralised water.

NOTE! Frequent cleaning is recommended to avoid bad hygiene and complicated cleaning - see *"5. Cleaning and maintenance" on page 22*.

- In general, it is always important to consider how much water should be in the tub 1 in relation to the types of packages to be tested:
  - If the purpose is to test relatively small packages, the tub should be filled so that the surface is slightly above the underside of the hole-plate 2 when lid 3 is closed (approx. 25 liters - check scale 4).
  - If it is larger packages that can expand a lot during the test, the amount of water in the tub must be adjusted so that the water level in the tub is somewhere between the underside of the hole-plate 2 and the "Max" marking on the scale 4 when the package is fully expanded during the test.
- There are two ways to fill the tub with water. It can be filled either manually (see *page 13*) or by using the vacuum function (see *page 14*).

Manual filling

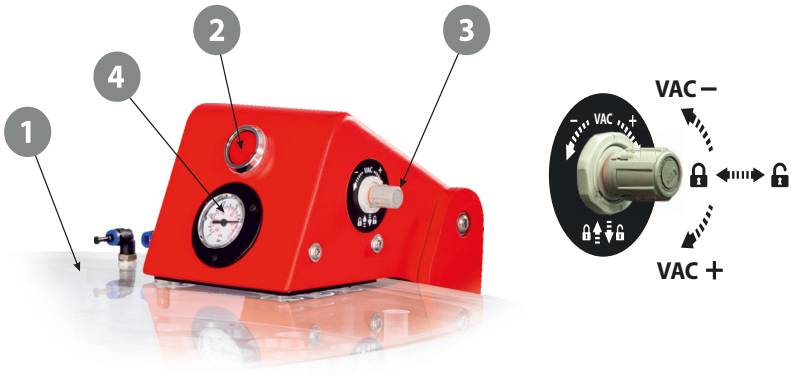
- Make sure that the valve 1 is closed.
- Fill water into the tub 2 from f.ex. a container 3 until the required level has been reached - check scale 4.

Filling using the vacuum function

- Make sure that the valve 1 is closed.
- Before you start the actual filling we recommend that you adjust the vacuum to approx. 100 mbar - see *"Operation and adjustment of chamber vacuum" on page 15*.
- Insert the hose 2 into a filled water container 3.
- Open the valve 1.
- Start the device again as described in *"Operation and adjustment of chamber vacuum" on page 15*. The vacuum system will now start to suck water from the container and into the tub 4.
- Follow the filling progress on the scale 5 and when the required level has been reached, close the valve 1 and then stop the device.

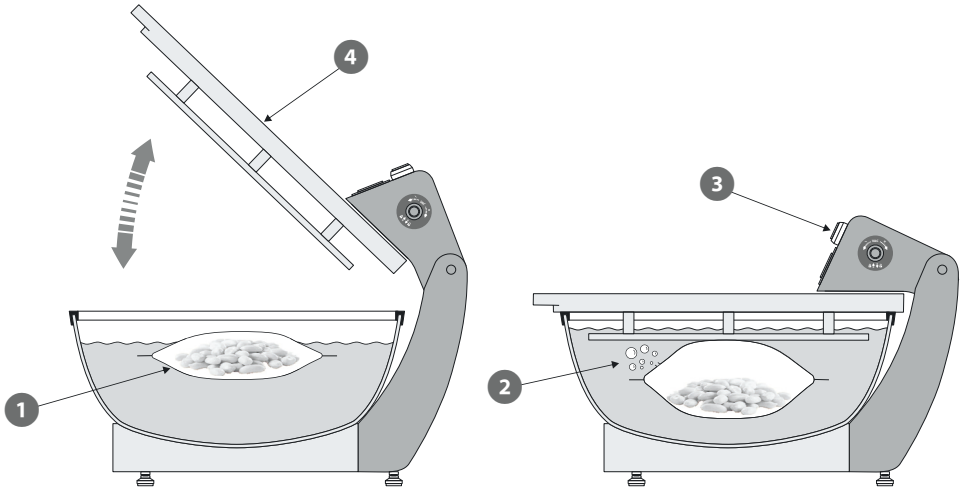
3. Operating

Operation and adjustment of chamber vacuum



1. Close the lid 1.
2. While slightly pressing the lid downwards, start the vacuum ejector by pushing the red button 2. The button must be pressed hard enough to lock in the pressed position.
3. When you feel the lid being sucked close to the tub, you can let go.
4. If necessary, unlock the knob 3 by pulling it outwards, then adjust the vacuum inside the tub by turning the knob. Turn clockwise to increase vacuum and anticlockwise to decrease vacuum. The vacuum gauge 4 shows the current vacuum.
5. When the desired vacuum is set and stable, you can lock the knob 3 by pushing it in. If necessary, pull out the knob, before making adjustments.
6. When finished, push the button 2 to release it. The tub ventilates and finally the lid 1 opens.

Package testing

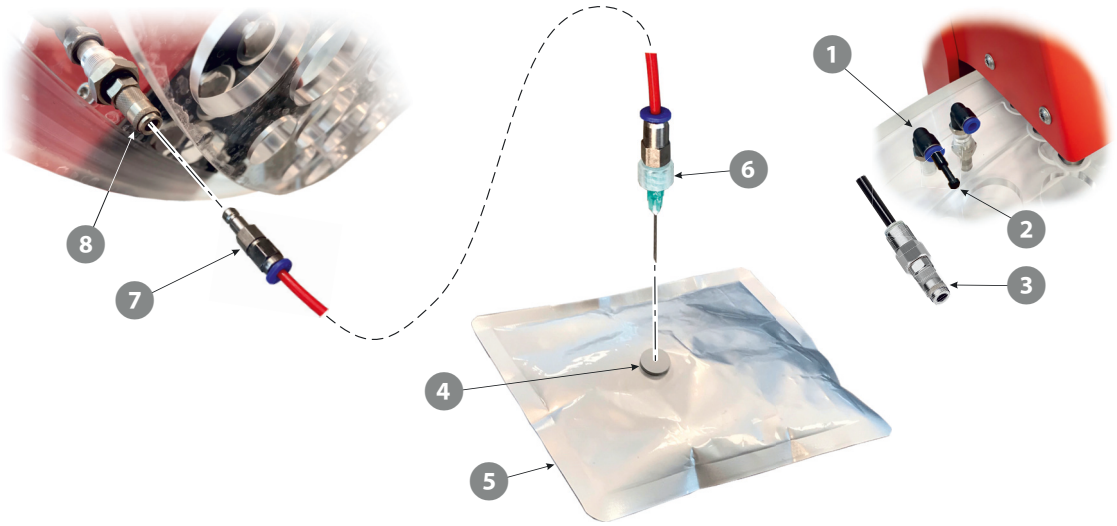


1. Ensure that the right amount of water has been filled into the tub see *"Filling of water" on page 12*.
2. Place the test sample 1 in the water.
3. Start test and if necessary adjust the vacuum as described in *"Operation and adjustment of chamber vacuum" on page 15*.
4. When vacuum is stable you can inspect the sample. Air bubbles 2 will indicate that there is a leak and also where the leak is located.
5. When finished, push the button 3 to release it. The tub ventilates and finally the lid 4 opens.
6. Now you are ready to test another sample.

Test with balance hose

In some cases, there is not enough air in the package to create a pressure inside the package (DeltaP) high enough to detect a leak.
In these cases, we recommend using the supplied balance hose, which allows air to be sucked into the package from the outside during the test.

NOTE! The DeltaP in the package will now be the same as the tub vacuum.



1. Make sure that the fitting 1 is blocked, either by means of the plug 2 or the pressure measuring hose 3 from the digital pressure meter (option - see *page 18*).
2. If you want to use the digital pressure meter (option - see *page 18*) to measure the tub vacuum, this should be connected as described in *"Measuring the tub vacuum" on page 19*.
3. Place a septum 4 on the package 5 and insert the needle 6.

   CAUTION! Be careful not to insert the needle into the package contents, as this may soil or block the needle.

4. Connect the hose connector 7 to the quick coupling 8 located on the underside of the lid in the rear left corner.
5. Place the package 5 in the water and start the test - see *"Package testing" on page 16*.

CAUTION! The pressure inside the package (DeltaP) will be the same as the vacuum in the tub, so it is important that the test vacuum is not too high, as this may cause the package to burst (water must be exchanged).
Depending on the package size it might take some time to balance the pressure inside the package.

P/N 390225-C
11/2021

Using the Digital Pressure Meter

In some cases, it may be necessary to get a more accurate reading of the current vacuum level in the tub, or you would like to be able to measure the current DeltaP in the test package. For this purpose you can use the Digital Pressure Meter (Option - see *"Options/Accessories" on page 32* for details).

NOTE! Please refer to the user guide that comes with the device for details about settings and operation.

Connection

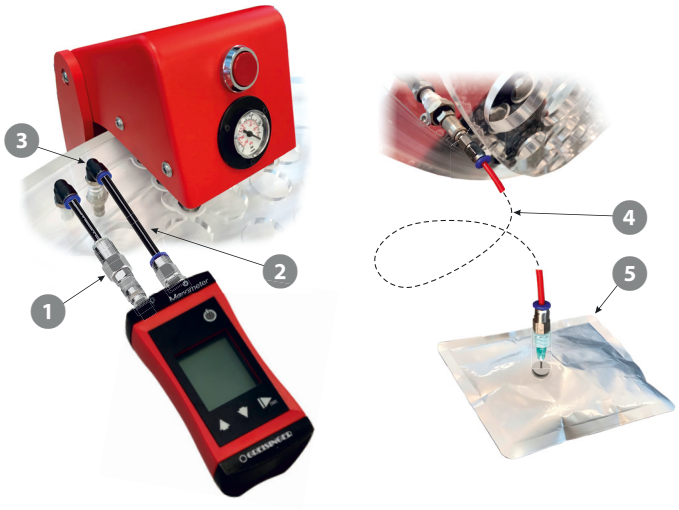
The device comes complete with all the fittings needed to connect it to the **LeakPointer H_2O**.

- Remove the plug 1 from the fitting 2 (press the blue sleeve inwards on the fitting to be able to remove the plug).
- Disconnect the hose 3 from the device and connect it to the fitting 2. Push the hose as far as it goes into the fitting, then check the connection by pulling the hose slightly backwards.
- Now you are ready to either measure the chamber vacuum or the package DeltaP as described on *page 19*.

Measuring the tub vacuum

- Connect the device to the hose 1 - do NOT connect the hose 2.

Measuring the package DeltaP



- Connect the device to the hose 1.
- Connect the hose 2 to the fitting 3.
- Connect the balance hose 4 to the test package 5 as described in *"Test with balance hose" on page 17*.

4. Troubleshooting

Vacuum cannot be established

Does ejector start when pushing start button?	NO ➡	▪ Check that air supply is connected. ▪ Check that no hoses are bent. ▪ Check that hoses are connected according to flow drawing - see *"Internal connections" on page 29*. ▪ Check that flow adjustment is fully open
YES ⬇		
With ejector started and lid open, can you feel/hear vacuum in air-vent hole?	NO ➡	▪ Check that no hoses are bent. ▪ Check that hoses are connected according to flow drawing - see *"Internal connections" on page 29*. ▪ Check that flow adjustment is fully open ▪ Clean ejector and make sure that silencer is not blocked.
YES ⬇		
Are sealing without damages and correct mounted.	NO ➡	▪ Mount sealing correct - see *"Replacement of parts" on page 26* ▪ Replace sealing - see *page 32* for ordering details.
YES ⬇		
When closing the lid, does sealing seal properly against lid without air gap?	NO ➡	▪ Adjust lid - see *"Lid adjustment" on page 24*
YES ⬇		
When closing the lid and starting ejector, can you feel vacuum from balance hose inlet?	NO ➡	▪ Remove balance hose ▪ Check that check valve in quick coupler works. If not replace quick-coupler - see *page 32* for ordering details.
YES ⬇		
Is hose between vacuum gauge and lid mounted correct?	NO ➡	▪ Mount hose according to flow drawing - see *"Internal connections" on page 29*.
YES ⬇		
▪ Call MOCON Europe A/S Support Dept.		

Lid will not stay in open position

Have you added extra weight to the lid? YES ➡
- Remove the extra load.

NO ⬇

- Replace gas springs - see *page 32* for ordering details.

Tub is leaking

Is leak coming from other place than drain hose area? YES ➡
- Replace water tub immediately - see *page 32* for ordering details.

NO ⬇

Is leak coming through drain hose connection. YES ➡
- Make sure drain valve is fully closed.
- Clean drain valve if dirty inside.
- Replace drain valve - see *page 32* for ordering details.

NO ⬇

Is leak coming from drain connection branch on tub. NO ➡
- Replace water tub immediately - see *page 32* for ordering details.

YES ⬇

- Tighten hose clamps.
- Replace hose - see *page 32* for ordering details.

P/N 390225-C
11/2021

5. Cleaning and maintenance

Cleaning

Recommended cleaners and tools

- As the tub 1 and lid 2 can easily be scratched, we recommend to use a soft brush 3 or a sponge 4 when cleaning the tub 1, hole-plate 5, and lid 2.
- Never use water above 50°C in the tub.
- For normal cleaning, use water or a mild non-alkali detergent.
- For dissolving of limestone deposits, use a mild solution of phosphatic or citric acid (<10%).

Cleaning procedure

1. Enter the hose 6 into an empty container (min. 25 liters).
2. Open the valve 7 to drain the tub 1.
3. Disconnect the drain hose 6.
4. When empty, the tub 1 can be lifted off and carried away for cleaning in a sink if preferred.

CAUTION! Make sure that the unit is placed on a stable surface when removing the tub, as the high positioned centre of gravity can cause the unit to turn over.

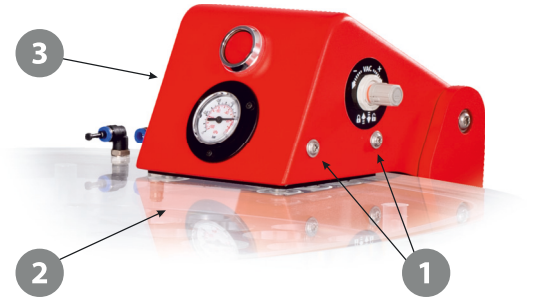
5. The sealing 8 can be removed and cleaned separately.
   For correct mounting of the sealing, see *"Replacement of parts" on page 26*

6. Unscrew the screw 9 to remove the hole-plate 5 for cleaning. It is now possible to clean the underside of the lid 2 as well.
   Please note that when the hole-plate is mounted correctly, it should still be able to move slightly up and down.
7. After cleaning, fill the tub as described in *"Filling of water" on page 12*.

Adjustments

Lid adjustment

If the lid does not seal properly and evenly against the tub sealing, this can be adjusted:



NOTE! This requires that the sealing is correctly mounted on the tub - see ***"Replacement of parts" on page 26*****.**

1. Loosen the 4 screws 1 (2 on each side) connecting the lid 2 to the console 3.
2. Close the lid 2 and while slightly pressing it downwards, start the vacuum ejector and adjust vacuum to approx. 100 mbar.
3. When you feel the lid being sucked close to the tub, verify that the lid seals evenly against the tub sealing, then tighten the 4 screws 1 again.
4. Release the vacuum then start test again to check that lid seals properly now.

Adjusting the tub positioning sleeves

NOTE! We recommend that two persons perform this operation, as it requires for the unit to be tilted while screws are tightened underneath.

If the tank is slightly skewed or if it needs to be turned to change the location of the drain outlet, it may be necessary to slightly adjust the tub positioning sleeves:

1. Drain the tub 1 and lift it off.
2. Tilt the unit to be able to loosen the 4 screws 2 (underneath) that secure the sleeves 3 to the base 4.

   NOTE! The screws 2 should only be loosened so much that it still requires a little force to move the sleeves 3.

3. Mount the tub 1 in the sleeves 3 again and then close the lid 5 to check the alignment of the lid and the sealing 6. If necessary wiggle the tub 1 to adjust the positions of the sleeves 3.
4. When finished, while holding the lid closed to keep the tub in place, tilt the device backwards to be able to tighten the 4 screws 2.

Replacement of parts

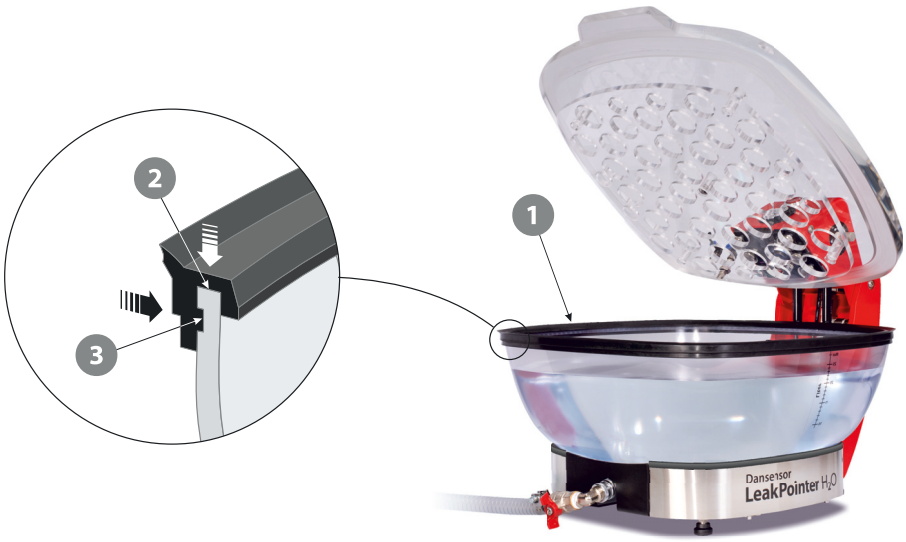
NOTE! We recommend that you perform the replacements as described in this section every 12 months.

See *"Consumables, replacement parts and options" on page 32* for information about available replacement parts.

Replacing the sealing

After cleaning or in connection with replacement, the gasket must be mounted on the edge of the tub:

1. Remove the old sealing 1.
2. Make sure to press the new sealing properly onto the tub edge 2 all the way around the tub.
3. Make sure that the projecting edge on the sealing fits into the small groove 3 all the way around the tub.



Replacing the gas springs

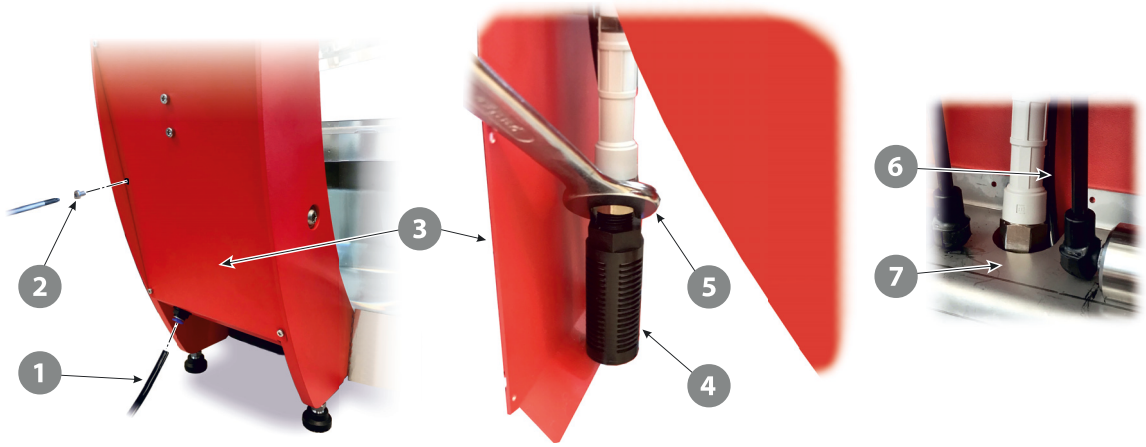
NOTE! We recommend that two persons perform this operation, as the lid must be held open while the gas springs are removed and mounted, respectively.

Required tools:

- Flat tip screwdriver, small

1. Drain the tub (1) as described in *"Cleaning procedure" on page 22*.
2. Disconnect the drain hose (2) then remove the tub (1).
3. Remove the original gas springs (3). To do so, use a flat-tip screwdriver (4) to release the locks (5) in both ends and press them downwards (upwards at the top) until you are able to pull the springs off the pivots (6) (see detail).
4. Mount the new gas springs (before that the pivots (6) must have been removed from them as described above).
5. Before mounting the springs, return the locks (5) to their original positions, then click the gas springs onto the pivots.

Replacing the silencer



Required tools:

- Screwdriver, Torx 10
- Wrench, 19 mm

1. Disconnect the compressed air supply hose 1. To disconnect the hose, push down on the blue sleeve on the connector, then pull the hose out of the connector.
2. Remove the 6 screws 2 (Torx 10 screwdriver) holding the rear panel 3.
3. Tilt the rear panel 3 out to access the silencer 4.
4. Replace the silencer 4.

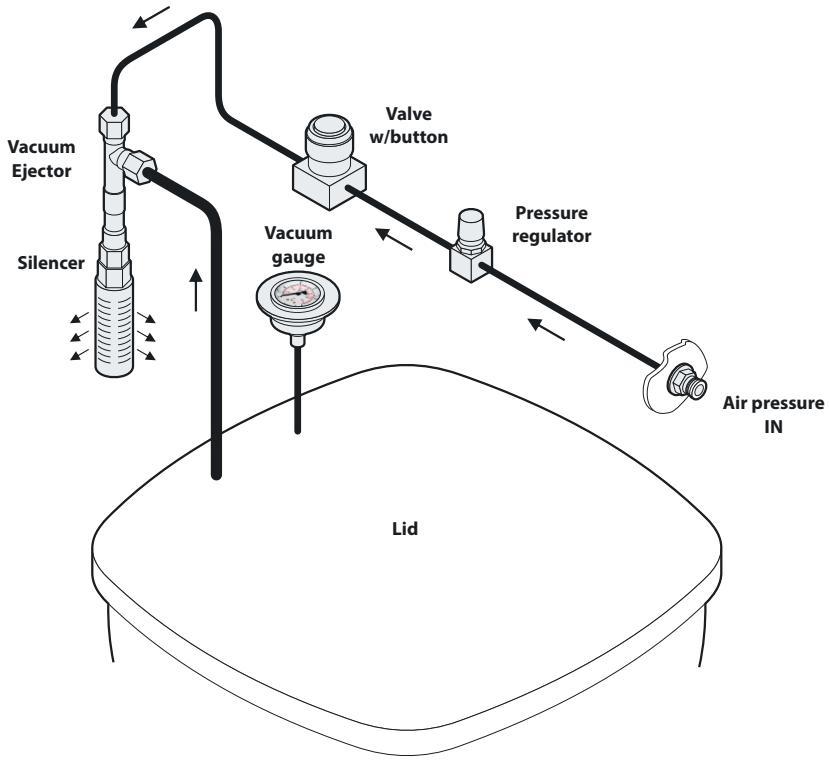
CAUTION! The silencer is loosened and tightened by hand only - we recommend holding against with a wrench (19 mm) 5 on the already mounted fitting to avoid damaging the existing assembly.

5. Mount the rear panel 3 again and connect the compressed air supply hose 1.

CAUTION! When mounting the real panel 3, make sure the especially the hose 6 coming from the compressed air supply fitting is not squeezed between the panel 3 and the bracket 7.

Internal connections

The drawing below shows the internal connection of components.



6. Technical Data

Compressed air supply

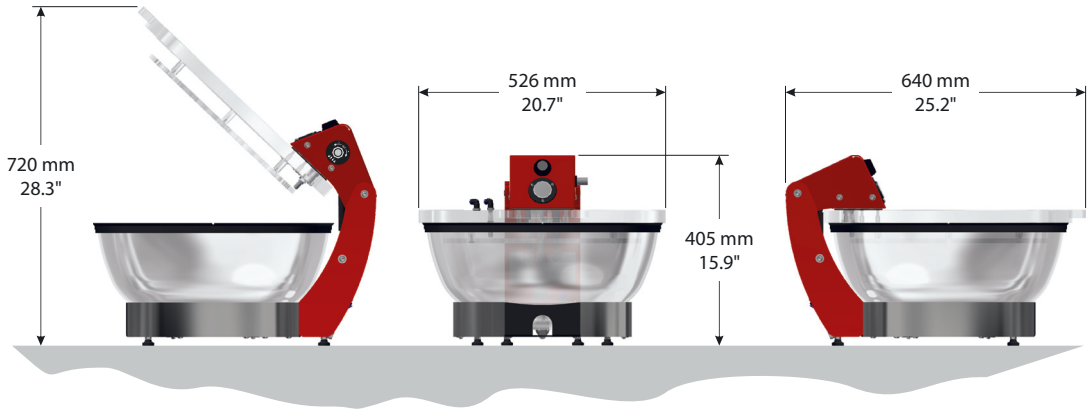
Hose dimensions	Ø6/4 mm [1]
Air supply pressure	6.0 - 7.0 bar [2]
Air consumption	Max. 185 l/min.
Air quality	Dry, clean and free from oil Compliant with 2.4.3, 2.5.3 and 2.6.3 of ISO 8573-1:2010 (JIS B8392-1: 2012)

[1] Ensure that the used hose type is appropriate for the required pressure

[2] Measured max. 1 m from compressed air inlet

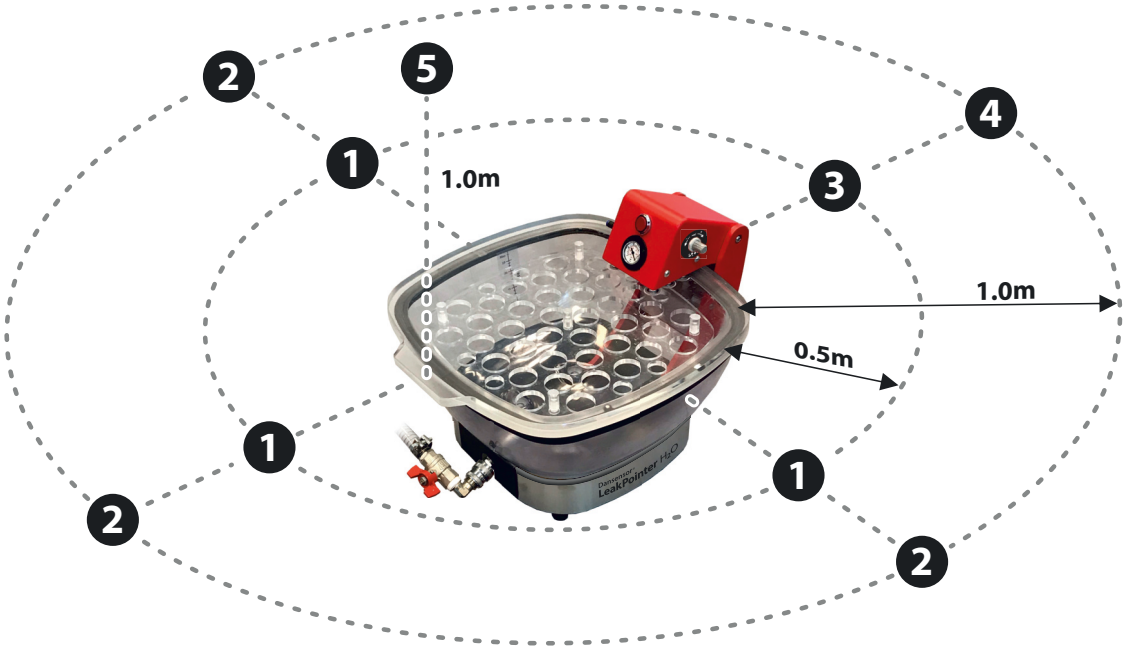
Mechanical specifications

Dimensions	See illustration below Crated (WxDxH): 830x650x710mm (32.7x25.6x28”)
Weight	Unpacked: 22kg (49 lbs) Crated: 57kg (126 lbs)
Chamber volume	~25 litres (in level with hole-plate)
Chamber vacuum	Min.: -50 mbar – min. vacuum meter reading Max.: Down to min. -800 mbar.
Noise level	At Operator: ~73 dB See *"Noise emission" on page 31* for details.
Ambient temperature	Operation: +2 to +35 °C Storage: - 20 to +60 °C



Noise emission

Position	❶	❷	❸	❹	❺
Noise level (max.)	72 dBA	70 dBA	80 dBA	74 dBA	73 dBA



Consumables, replacement parts and options

Ordering items

When ordering any of the below listed items please state carefully the item number, the item specification and the number of items wanted and send the order to your spare parts dealer.

Consumables and replacement parts

- Silencer, Ejector, 3/8" ..... P/N 390270
- Sealing, tub, LeakPointer H2O, Ser. Cpl. ..... P/N 390414
- Gas spring 400N, 40mm stroke (2 pcs.) Ser. Cpl. ..... P/N 390425
- Septum, ø15mm, grey (100 pcs.) Ser. Cpl. ..... P/N 310336
- Septum, ø15mm, grey (1000 pcs.) Ser. Cpl. ..... P/N 310337
- Needle kit Ø0,8x16mm (100 pcs.) Ser. Cpl ..... P/N 390117

Options/Accessories

- Hose, drain, back, LeakPointer H2O, Ser. Cpl. ..... P/N 390415
- Pressure meter, digital, LeakPointer H2O, Ser. Cpl. ..... P/N 390420

This blank page has been inserted to enable double sided printing of the document!

MOCON Europe A/S
Rønnedevej 18
4100 Ringsted, Denmark
Tel +45 57 66 00 88
info.dk.mocon@ametek.com
www.ametekmocon.com