

KSH

► Assembly, installation and operating instructions

Keep these instructions in a safe place for future use!

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1 General

1.1 About these instructions

These instructions ensure the safe and efficient handling of this equipment. These instructions form an integral part of the equipment and have to be kept in the direct vicinity of the equipment and available to personnel at all times.

All personnel must have carefully read through these instructions prior to commencing all work on the equipment. A fundamental prerequisite for safe working is compliance with all the stated safety instructions and other instructions contained in this manual.

In addition all local occupational health and safety at work regulations apply, as do general safety provisions governing the use of the equipment.

Illustrations in this guide are intended to provide a basic understanding and may differ from the actual model.

Ongoing tests and further developments may result in small variations between the unit supplied and the instructions.

1.2 Explanation of Symbols



WARNING!

This combination of symbol and signal word indicates a possible hazardous situation.



IMPORTANT NOTE!

It represents a potentially hazardous situation, which could lead to damage to property or for a measure to optimise workflows.



IMPORTANT NOTE!

This symbol highlights useful hints, recommendations and information for efficient and trouble-free operation.

2 Safety

This section provides an overview of all important safety aspects to ensure optimum protection of personnel as well as safe and trouble-free operation. In addition to the safety instructions in these operating instructions, the valid safety, accident prevention and environmental protection regulations must be observed for the area of use of the unit. It is the duty of the operator to ensure that instructions relating to maintenance (e.g. relating to hygiene) are complied with.

2.1 Correct use

Combined diffusers are designed to supply and distribute preconditions air into air conditioned sealed indoor areas with ambient temperatures of between 0 – 50°C and a relative air humidity of up to a maximum of 90%. The operating limits and limits of use described in Chapter 2.2 [▶ 5] must be observed.

Intended use of the unit also includes adherence to these instructions.

Information in accordance with EN60335-1

- ▶ This unit can be used by children aged 8 years or more and also by people with reduced physical, sensory or mental capabilities or a lack of experience and knowledge, if they are supervised or have been instructed in the safe use of the unit and the resulting dangers. Do not allow children to play with the unit. Do not allow children to clean and maintain the unit without supervision.
- ▶ This unit is not intended for permanent connection to the drinking water supply system.
- ▶ This unit is intended for being accessible to the general public.

Any use beyond or other than the stated intended use is considered as misuse.

Any change to the unit or use of non-original spare parts will cause the expiry of the warranty and the manufacturer's liability.

2.2 Limits of operation and use

Variable	Value	Unit
Temperature range	0 – 50	°C
Max. relative air humidity	90	%



IMPORTANT NOTE!

Warning of misuse!

In the event of misuse, as itemised below, there is a danger of limited or failing operation of the unit. Ensure that the airflow can circulate freely.

- ▶ Never operate the unit in humid areas, such as swimming pools, wet areas etc.
- ▶ Never operate the unit in rooms with an explosive atmosphere.
- ▶ Never operate the unit in aggressive or corrosive atmospheres (e.g. sea air).

2.3 Personnel requirements - Qualifications

Expertise

The installation of this product requires specialist knowledge of heating, cooling, ventilation, installation and electrical engineering. This knowledge, generally learned in professional training in one of the fields mentioned above, is not described separately.

Damage caused by improper installation is the responsibility of the operator or installer. The installer of these units should have adequate knowledge of the following gained from specialist professional training

- ▶ Safety and accident prevention regulations
- ▶ Guidelines and recognised technical regulations, i.e. Association of German Electricians VDE regulations, DIN and EN standards.
- ▶ VDI 6022; maintenance personnel must be trained to Category B (possibly Category C) to comply with hygiene requirements (as required).

The installation, operation and maintenance of this unit must comply with the applicable laws, standards, provisions and regulations in the respective country and the current state of the art.

Expertise

The installation of this product requires specialist knowledge of heating, cooling, ventilation, installation and electrical engineering.

Damage caused by improper installation is the responsibility of the operator or installer. The installer of these units should have adequate knowledge of the following gained from specialist professional training

- ▶ Safety and accident prevention regulations
- ▶ Country-specific guidelines and recognised technical regulations, i.e. Association of German Electricians (VDE) regulations, DIN and EN standards.
- ▶ VDI 6022; maintenance personnel must be trained to Category B (possibly Category C) to comply with hygiene requirements (as required).

2.4 Personal Protective Equipment

Personal protective equipment is used to protect people from impaired safety and health when working with the unit. The applicable accident prevention regulations at the place of use apply in all cases.

Personnel have to wear personal protective equipment during maintenance and troubleshooting on and with the unit.

3 Transport, storage and packaging

3.1 General transport instructions

Check on delivery for completeness and transport damage.

Proceed as follows in the event of visible damage:

- ▶ Do not accept delivery or only accept with reservations.
- ▶ Record any transport damage on the transportation documents or on the transport company's delivery note.
- ▶ Submit a complaint to the freight forwarder.



IMPORTANT NOTE!

Warranty claims can only be made within the applicable period for complaints. (More information is available in the T&Cs on the Kampmann website)



IMPORTANT NOTE!

2 people are needed to transport the unit. Wear personal protective clothing when transporting the unit. Only lift the unit on both sides and not by the pipes / valves.



IMPORTANT NOTE!

Material damage caused by incorrect transport!

Units being transported can drop or topple over if transported wrongly. This can cause serious material damage.

- ▶ Proceed carefully when unloading the equipment on delivery and when transporting it on site and note the symbols and instructions on the packaging.
- ▶ Only use the holding points provided.
- ▶ Only remove packaging shortly before assembling the unit.

3.2 Scope of delivery



IMPORTANT NOTE!

Check the scope of delivery!

- ▶ Check the delivery for damage.
- ▶ Check that the articles and type numbers are correct.
- ▶ Is the delivery and number of items delivered correct?

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3.3 Storage

Store packaging under the following conditions:

- ▶ Do not store outdoors.
- ▶ Store in a dry and dust-free place.
- ▶ Store in a frost-free place.
- ▶ Do not expose to aggressive media.
- ▶ Protect from direct sunlight.
- ▶ Avoid mechanical vibrations and shocks.



IMPORTANT NOTE!

Under certain circumstances, packages can carry storage instructions that exceed the requirements listed here. Comply with these instructions accordingly.

3.4 Packaging

Handling packaging materials



IMPORTANT NOTE!

Dispose of packaging materials in line with the applicable statutory requirements and local regulations.

4 Technical data

Number of slot strips	Nominal length [mm]	Supply air volume V [m³/h]	Exhaust air volume V [m³/h]	Sound power level L _w (total of supply air and exhaust air) [dB(A)]	Pressure loss on supply air side Δp [Pa]
2	500	105	0	35	34
	600	75	75	35	29
	800	95	95	35	33
	1000	105	105	35	33
	1200	115	115	35	34
3	500	140	0	35	29
	600	105	105	35	30
	800	120	120	35	28
	1000	140	135	35	31
	1200	155	150	35	32

Tab. 1: Technical data, KSH (without throttle)

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5 Construction and function

5.1 Overview

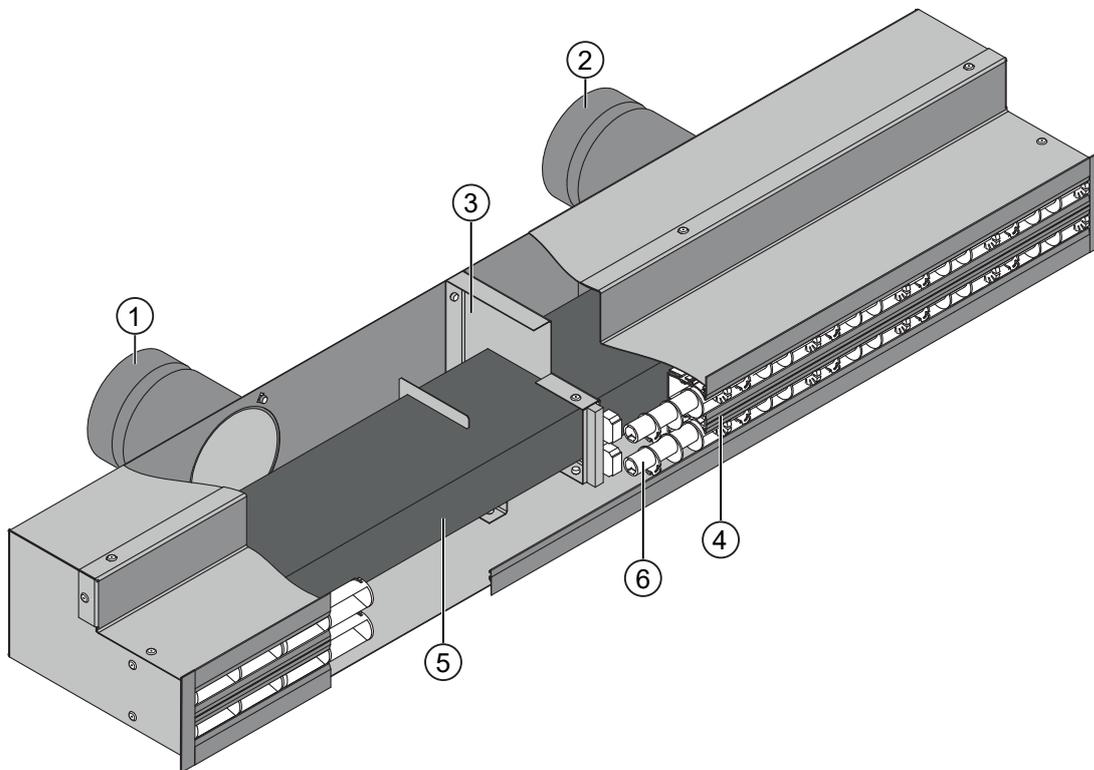


Fig. 1: KSH at a glance

1	Exhaust air spigot	2	Supply air spigot
3	Partition between supply air and exhaust air	4	Diffuser front (2-slot version)
5	Acoustic insulation backing (building material class B1)	6	Eccentric roller

5.2 Brief description

The KSH is a combined diffuser for use in and behind drywalls. The opening combines a supply and exhaust air opening in a system. The visible outlet front runs continuously, so that the opening has the appearance of a continuous slot. The KSH can optionally be equipped with flow limiters in the supply and exhaust air connectors.



5.3 Dimensions/Nominal lengths

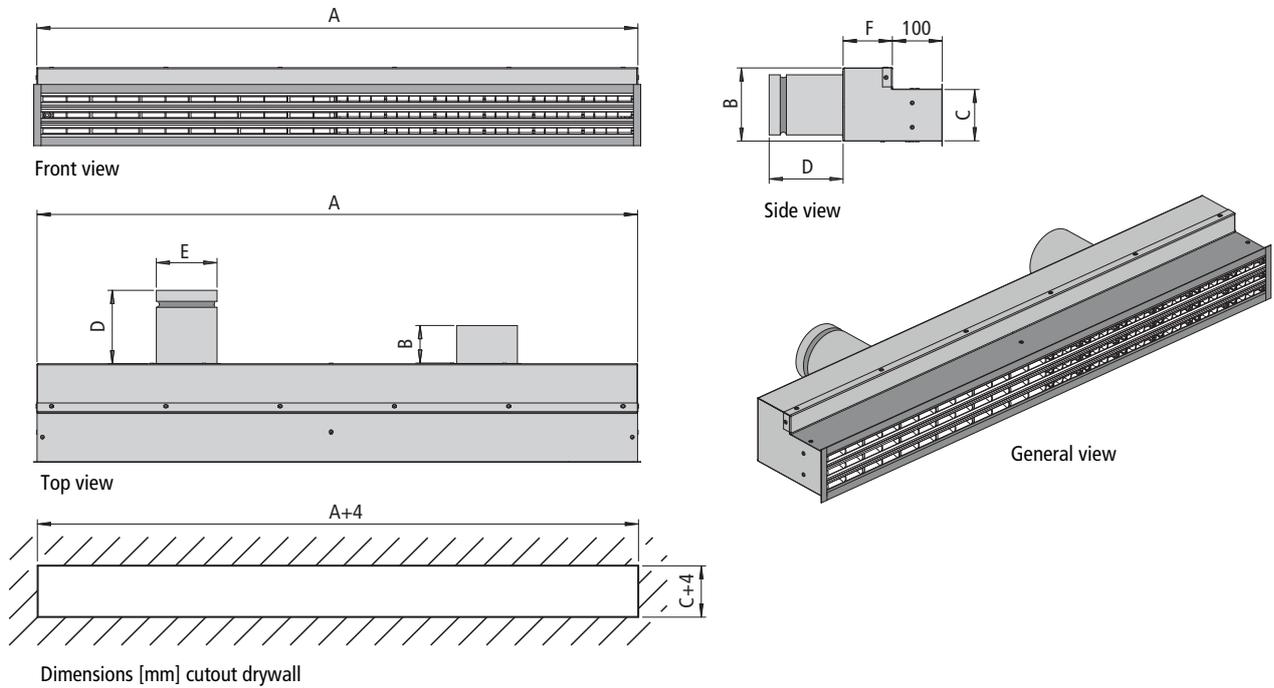


Fig. 2: Views of KSH

(All figures in mm)

Number of slots = 2	Nominal length 500*	Nominal length 600	Nominal length 800	Nominal length 1000	Nominal length 1200
A (junction box)	518	618	818	1018	1218
B (overall height)	125	125	125	125	125
C (height of neck)	73	73	73	73	73
D (width of spigot)	115	115	115	115	115
E (diameter of spigot)	98	98	98	98	98
F (width at rear)	100	100	100	100	100

Tab. 2: Dimensions of available nominal lengths (number of slots 2)

Number of slots = 3	Nominal length 500*	Nominal length 600	Nominal length 800	Nominal length 1000	Nominal length 1200
A (junction box)	518	618	818	1018	1218
B (overall height)	165	165	165	165	165
C (height of neck)	114	114	114	114	114
D (width of spigot)	150	150	150	150	150
E (diameter of spigot)	123	123	123	123	123
F (width at rear)	125	125	125	125	125

Tab. 3: Dimensions of available nominal lengths (number of slots 3)

* Nominal length 500 only available with one spigot as supply air or extract air! No combi diffuser!

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6 Installation and wiring

6.1 Requirements governing the installation site

Only install and assemble the unit if the following conditions are met:

- ▶ Make sure that the wall/ceiling is sufficiently load-bearing to take the weight of the unit (Technical data [▶ 9]).
- ▶ Make sure that the wall/ceiling is sufficiently load-bearing to take the weight of the unit.
- ▶ Make sure that the ceiling is sufficiently load-bearing to take the weight of the unit (Technical data [▶ 9]).
- ▶ Make sure that the unit is securely suspended/standing.
- ▶ Ensure that the airflow can circulate freely.

6.2 Installation

2 people are needed to install the unit.



CAUTION!

Risk of injury from sharp metal housing!

The inner metal of the casing can have sharp edges.

- ▶ Wear suitable protective gloves.

6.2.1 Installation situation (unit installed)

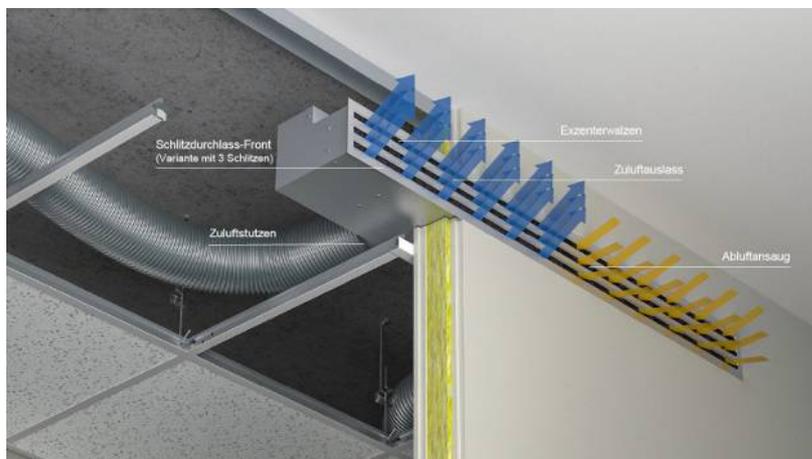
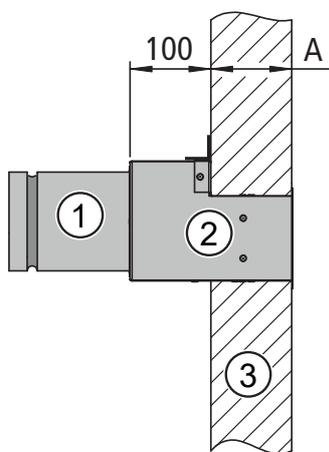


Fig. 3: KSH installation situation

1	Spigot (Supply air/exhaust air)	2	KSH
3	Dry wall, double panelled (A = 100 mm)		

6.2.2 Installing KSH in a dry wall

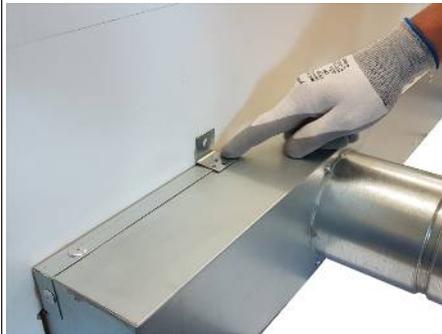


Fig. 4: Positioning the brackets

- ▶ Position the bracket (on site) left and right with the large drill hole on the dry wall.
- ▶ Mark points for drill holes on the KSH.



Fig. 5: Drilling holes

- ▶ Use a steel drill (Ø4 mm) to drill the marked holes.



Fig. 6: Connecting the bracket to the housing

- ▶ Connect the bracket to the housing on the left and right with a 4 mm rivet.



Fig. 7: Screwing the bracket to the wall

- ▶ Use appropriate screws to fix the bracket to the dry wall on the left and right.

6.2.3 Fitting position of the diffuser front

Pay attention to the correct position when fitting the front of the diffuser!

- ▶ In the standard fitting position, a small adhesive label stating "top" on the front of the diffuser indicates the correct position of the front of the diffuser.
- ▶ In alternative fitting positions, the front of the diffuser also needs to be fitted in such a way that the adhesive label points upwards. This prevents the supply air from blowing downwards.



Fig. 8: Fitting positions of KSH

6.2.4 Adjusting the eccentric rollers

The air stream can be manually adjusted using the eccentric rollers as shown on the diagram below using a slot-head screwdriver.

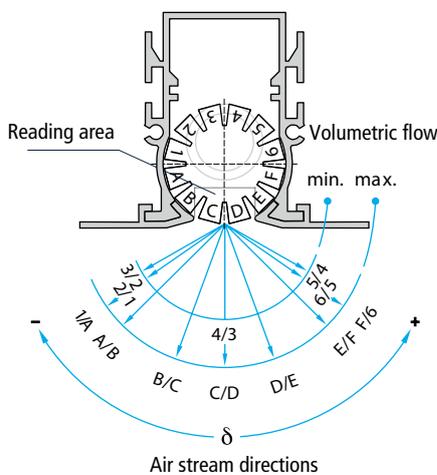


Fig. 9: Control of the air stream direction

6.2.5 Adjusting the optional volumetric flow limiter

Remove the volume flow limiter for adjustment purposes

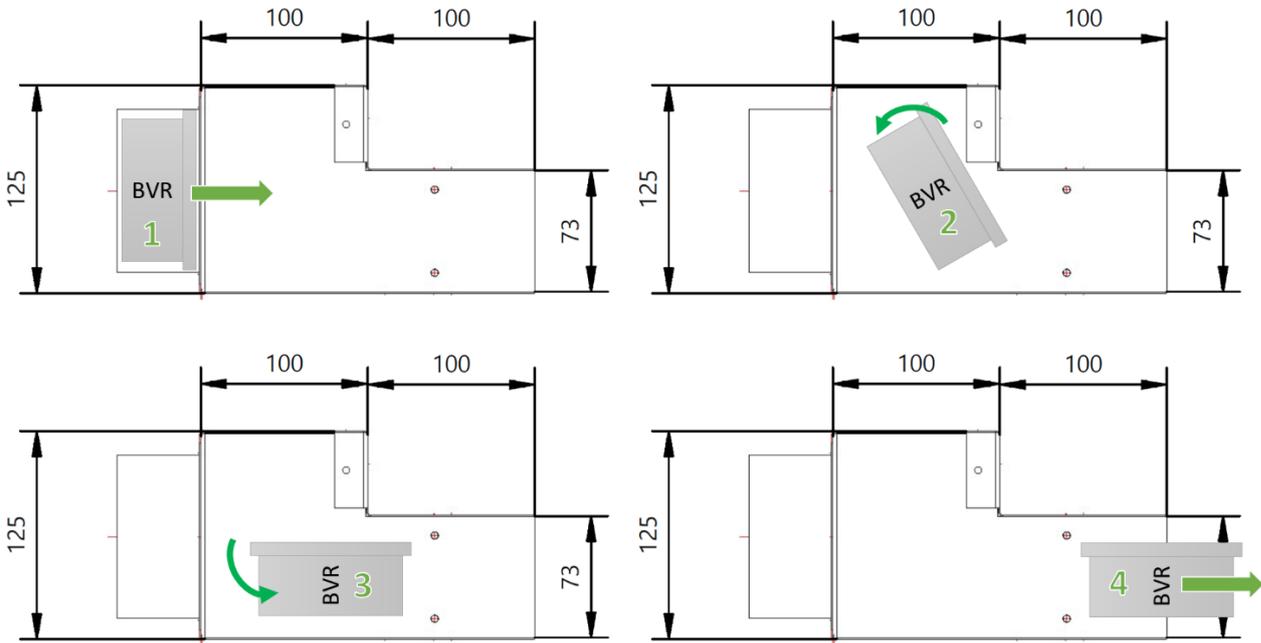


Fig. 10: Dismantle the volume flow limiter (BVR)

1	Remove the air outlet front and pull the BVR out of the nozzle.	2	Tilt BVR.
3	Tilt BVR.	4	Remove the volume flow limiter (BVR).

The optional volumetric flow limiter can be manually adjusted by turning as shown below using the scale.



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7 Pre-commissioning checks

Before initial commissioning, check whether all the necessary conditions have been met so that the unit can function safely and properly.

Structural tests

- ▶ Check that the unit is securely standing and fixed.
- ▶ Check the horizontal installation/suspension of the unit.
- ▶ Check whether all components are properly fitted.
- ▶ Check whether all dirt, such as packaging or site dirt, has been removed.

Air-side checks

- ▶ Check whether there is unimpeded flow at the air inlet and outlet.

8 Maintenance

8.1 Clean the inside of the unit

The diffusers conform to the Hygiene Directive VDI 6022. They are largely maintenance-free.

Check all elements that come into contact with air (internal surfaces of the unit, outlet elements etc.) for dirt or deposits during maintenance and use a commercially available product to remove.



Fig. 11: Loosen screws on the left and right.

- ▶ Unscrew the screws on the left and right on the front of the diffuser until they can be removed.



Fig. 12: Removing the diffuser front

- ▶ Remove the diffuser front from the KSH.

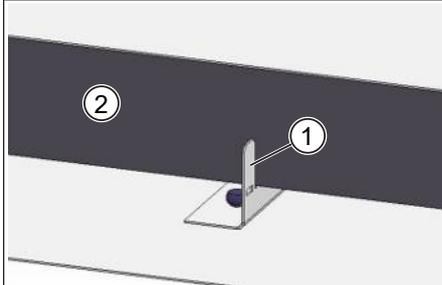


Fig. 13: KSH bracket

- ▶ Bend bracket ① down to remove the sound insulation backing ② .

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Fig. 14: Removing acoustic insulation backing

- ▶ Remove the acoustic insulation backing (2 pieces) and remove any dirt if required.



Fig. 15: Cleaning the diffusers

- ▶ Carefully use a damp cloth to clean the diffusers.

8.2 Cleaning the volumetric flow limiter

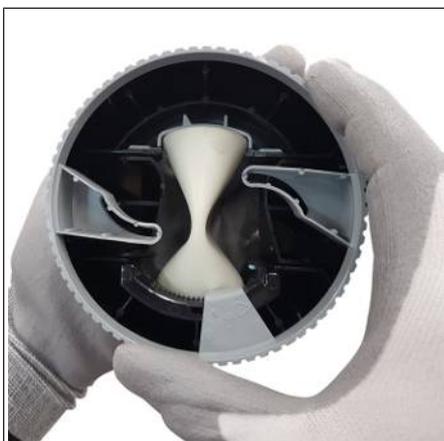


Fig. 16: Clean the volumetric flow limiter.

- ▶ Clean dust and dirt away from the volumetric flow limiter if need be.

Table

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Tab. 3	Dimensions of available nominal lengths (number of slots 3)	11

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