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Instruction Manual

Aspiration system Advantage and Basic

11538191 Aspiration Advantage System

15567479 Aspiration Basic System

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Instruction Manual

Aspiration system Advantage and Basic

Table of Contents

1 Important information

1.1 General information

The Aspiration Systems conforms to the:

2006 / 42 / EC	Machinery Directive
2014 / 30 / EC	Electromagnetic Compatibility Directive

The CE sign is located on the rating plate. Observe the binding national and local regulations when fitting the system into installations.

1.2 Target groups

This Operating Manual is intended for the personnel planning, operating and maintaining the Aspiration Systems. This group of people includes:
- Designers and fitters of vacuum apparatus
-Employees working on commercial laboratory and industrial vacuum technology applica-tions and
- Service personnel for Aspiration Systems

The operating and maintaining personnel of the Aspiration Systems must have the technical competence required to perform the work that has to be done. The user must authorise the operating personnel to do the work that has to be done. The personnel must have read and understood the complete Instruction Manual before using the Aspiration Systems. The Instruction Manual must be kept at the place of use and be available to the personnel when required.

1.3 Intended Use

The layout of the Aspiration Systems must be appropriate for the conditions of use. The user bears the sole responsibility for this.

The Aspiration Systems may only be operated under the conditions stated
–in the «Technical Data» section
–on the rating plate and
–in the technical specification for the order concerned

The Aspiration Systems have an integrated, chemical-resistant diaphragm pump. It is used in chemical and biological applications to extract non-explosive liquid residues safely and precisely.

1.4 Use for an Unauthorised Purpose

It is forbidden to use the pump for applications deviating from the technical data stated on the type plate or the conditions stated in the supply contract, or to operate it with missing or defective protective devices..

1.5 Safety Devices

Measures such as the following are for the safety of the operating personnel:

- operating mode S2 (with grounding connector)
- integrated fuse in the vacuum pump
- closed housing
- intact receiving bottle
- insertion of a particle filter suitable for the work task

1.6 Meaning of the Warning notes

Take note of the warning notes. They are in the following box:

⚠	**CAUTION / WARNING !**
	Hazard which may lead to serious injuries or material damage..

1.7 Product Standards, Safety Regulations

The Aspiration Systems fulfils the following product standards::

DIN EN ISO 12100-2011-03	Safety of machinery - General principles for design - Risk assessment and risk reduction
DIN EN ISO 13857:2008-06	Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs.
DIN EN 1012-2:2011-12	Compressors and vacuum pumps - Safety requirements - Part 2: Vacuum pumps
DIN EN ISO 2151:2009-01	Acoustics - Noise test code for compressors and vacuum pumps - Engineering method (grade 2)
DIN EN 60204-1:2014-10	Safety of machinery - Electrical equipment of machines - Part 1: General requirements
DIN EN 61000-6-2:2011-06 **DIN EN 61000-6-4:2011-09**	CElectromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments Part 6-4: Generic standards - Emission standard for industrial environments
DIN EN 61010-1/A1:2015-04	Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements
DIN EN 50110-1:2014-02	Operation of electrical installations
Directive 2012/19/EC	Electrical and electronics - old devices (WEEE)
Directive 2011/65/EC	Dangerous materials in electrical and electronics devices (RoHS II)
China - RoHS	Environment protection law - China 2016-01

The following additional safety regulations apply in the FR Germany:

BGV A3	Electrical equipment and operating materials
VBG 5	Power-driven machines
BGR 120	Guidelines for laboratories
BGI 798	Hazard assessment in the laboratory
BGG 919 (VBG 16)	Accident prevention regulations for «compressors»
BGR 189 (BGR 195;192;197)	Use of protective working clothes

Observe the standards and regulations applying in your country when you use the Aspiration.

2 Basic Safety Instructions

2.1 General information

WARNING !

Warning notices must be observed. Disregarding them may lead to damage to health.

The Aspiration Systems must be operated by personnel who can detect impending dangers and take action to prevent them from materialising.

The manufacturer or authorised workshops will only service or maintain the Aspiration Systems if it is accompanied by a fully completed damage report. Precise information about the contamination (also negative information if necessary) and thorough cleaning of the systems are legally binding parts of the contract.

Contaminated Aspiration Systems and their individual parts must be disposed of in accordance with the legal regulations.
The local regulations apply in foreign countries.

2.2 Electricity

The Aspiration Systems are supplied for operating mode S2.
Please note that the testing must be repeated in accordance with DIN EN 0105, DIN EN 0702 and BGV A2 in case of portable devices.
The local regulations apply in foreign countries.

Please note the following when connecting to the electrical power supply system:

- The electrical power supply system must have a protective connector according to DIN VDE 0100-410 (IEC 60364-4-41).
- The protective connector must not have any breaks.
- The connecting cable must not be damaged.

2.3 Mechanical System

Improper use can lead to injuries or material damage. Observe the following instructions:

- Only operate the Aspiration Systems with hoses of the specified dimensions.
- Solid particles in the pumping medium impair the pumping action and can lead to damage. Prevent their penetrating into the pump.
- Hazardous substances must be separated out as far as this is technically possible before they reach the pump.
- External mechanical stresses and vibrations must not be transmitted to the system. Only use a flexible laboratory hose for connecting the Aspiration Systems.
- The overpressure generated at the pressure port must not exceed 1 bar.
- The pump must not be used to pump liquids.
- Set the Aspiration Systems on a flat and horizontal surface.
- Do not close the space beyond the bottom of the device in order to enable the pump to cool..

2.4 Hazardous Substances

The responsibility for using the Aspiration Systems rests with the operator.
Hazardous substances in the gases to be pumped can cause personal injuries and property damage. Pay attention to the warning notices for handling hazardous substances.
The local regulations apply in foreign countries.

Explosive gases
The Aspiration Systems are not certified according to ATEX guidelines 2014/34/EU.
The system operator is obliged to comply with the ATEX 137 guidelines 99/92/EC when us-ing the pump within and for danger areas.

Aggressive gases
Perform appropriate investigations for the extraction of vapors and corrosive gases!
The warranty shall lapse if the Aspiration Systems are used with diaphragm pumps from other manufacturers.

Poisonous gases
Use a separator when pumping poisonous or harmful gases. Prevent such substances from leaking out of the appliance or pump. Treat these substances according to the applicable environmental protection regulations.
The built-in diaphragm pump, control valves and hose lines can be damaged by poisonous or aggressive gases.
Test the strength and leak-tightness of the connecting lines and the connected apparatus. Prevent environmental poisons, e.g. mercury, getting into the built-in diaphragm pumps.

Fulfil the requirements, for example:

- German Hazardous Substances Regulation (GefStoffV) of 01. December 2010
- Regulation 2016/1179EU (Classification, Packaging and Labelling of hazardous substances),
- Manufacturer's safety data sheets on hazardous substances.

2.5 High Temperatures

The built-in diaphragm pump may heat up as a result of the temperature of the gas being pumped and through compression heat.

Prevent the following maximum permissible temperatures from being exceeded.

Prévenez tout dépassement des températures maximales admissibles.

- + 40 °C for the environment and
- + 40 °C for the medium to be pumped.

The device is protected against overload by a fine-wire fuse.

3 Description

3.1 Design - Aspiration Advantage System

EBetween illuminated (13) receiving bottle (3) and built-in membrane pump (8) is an inline fil-ter hydrophobic (4) with a pore size of 0.22 microns to protect the membrane pump against pollution caused by fine solid particles and aerosols. A rapid action coupling (5) is used for the connection to the built-in diaphragm pump (8). It is provided with a stop valve. A partially chemical-resistant diaphragm pump (8), a pressure gauge (6) and a regulator (7) are used.
The closure of the receiving bottle (3) consists of a plastic lid with a seal (2). Receiving bottle(3) and handvac (10) are connecting with a hose (1) and (14). After disconnecting the unions, the two flexible tube ends (1) at the receiving bottle (3) may be connected to one another to ensure safe transport.
The Aspiration System is switched on and off directly at the device switches (9) or the op-tionally available foot push-button and/or foot switch (see accessories).
The user appropriate pipette tips (see also chapter 3.7) can be used in the respective adapter of the handvac (10) with single channel plastic adapter (12) and/or 8-channel plastic adapter (11). All hoses (1) located outside of the Aspiration System are made of silicone.

Fig. 1 Design – Aspiration Advantage System

3.2 Design - Aspiration Basic System

The Aspiration Basic System is without parts 6; 7; 10; 11; 12; 14 delivered.
Enclosed additional 1 m silicone hose 5 x 1.5 mm with rapid coupling and hose nozzle for connecting to a pipettor (Figure see cover).

3.3 Function

The Aspiration System with an integrated partially chemical-resistant built-in diaphragm pump is used for the safe and precise aspiration of non-flammable chemical and biological liquids.

The pressure, which is shown on the pressure gauge, may be preset with the regulator. The fluids can be removed easily and very precisely from slides, Petri dishes, cell culture re-bottles etc., by using different pipettes or glass tips which are inserted into the handvac. The integrated receiving bottle has a built-in float valve. This valve shuts the suction line automatically as soon as the maximum fill level is reached. A hydrophobic inline filter with a suitable filtration grade is inserted in order to provide additional safety.

3.4 Areas of Application

The Aspiration Systems are intended for:

- the safe and precise extraction and catching of liquid and non-explosive excess fluids
- use in the chemical, biological and medical areas
- generating a vacuum down to an ultimate pressure < 150 mbar

3.5 Accessories

Réf.	Désignation	
10591443	On/Off - Foot push-button	
15309804	On/Off - Foot switch	
12967914	Inline filter (hydrophobic), pore size 0.22 microns 10 Pieces/Pack	
15572620	handvac double set • handvac Pipettor with rubber adapter • Silicone hose 2m, inside ø 4 x 1,5 mm • Y-Connector PP, for hose NW 8 • Single Channel Plastic Adapter for tip with ejector	
10412163	8-Channel Stainless Steel Adapter	
15451934	Stand for handvac and accessories	
15432055	Silicone hose, 2 m length Inside diameter 6 mm x wall thickness 3 mm	

3.5 Materials of the medium-affecting parts

Component	Materials
Seal	EPDM
Hose nozzle / Connecting elements	PP
Valve	FKM
Diaphragm	PTFE layer foil
Hose	Silicone
Connecting head / Pump head	Ryton

3.6 Scope of Delivery

The scope of delivery is specified in the supply contract.

3.8 handvac Pipettor

The handvac is factory pre-set to allow a low level of constant suction.

The handvac Advantage Set consists of:

- handvac Pipettor with rubber adapter
- Silicone hose 2 m length, inside ø 4 x 1.5 mm
- Single channel plastic adapter for disposal tips with ejector
- 8-channel plastic adapter with ejector

3.8.1 Operation

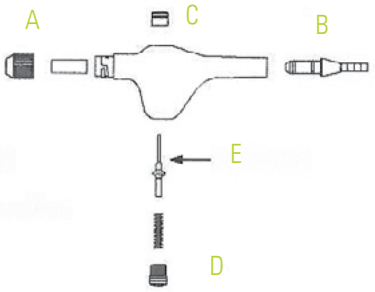
1. Slide the flexible hose over the hose nozzle (B) of the handvac.
2. Remove the bayonet socket from the adapter port (A) Insert a one-channel or 8-channelplastic adapter with a rubber adapter into the base and close the bayonet socket.
3. Press the button (C) when overpressure is applied. The valve (E) is opened and the fluidmay be extracted using a pipetting tip. The suction capacity may be controlled using thebutton (C).
4. Turn the screw (D) to adapt the suction capacity. Turn right to close the valve (E). Turnleft to set a constant suction capacity.

3.8.2 Cleaning and Service

- The handvac is fully autoclavable.
- Clean by immersing all pieces in a solution of water and mild laboratory detergent. Do not use abrasives, as this may affect operation of the control valve. Rinse with distilled water.
- Apply a thin coat of lubricant (in the scope of delivery) as needed to the control valve (E).

3.8.3 Special Care Instructions

PAutoclave the handvac prior to disassembly, see fig. at right.
Immediately flush the handvac with ethanol after working with organic solvents.
To avoid build-up of deposits, immediately flush the handvac with salt-rich solutions.
EFor seals replacement, use silicone - O-Rings only.



4 Technical Data

4.1 Dimensional drawing

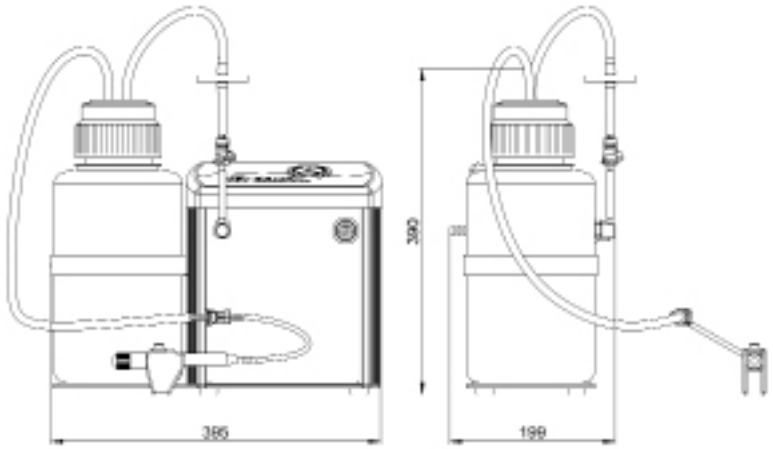


Fig. 2 Dimensions – Aspiration Advantage System

4.2 Intake Pressure / Pumping Speed - Diagram

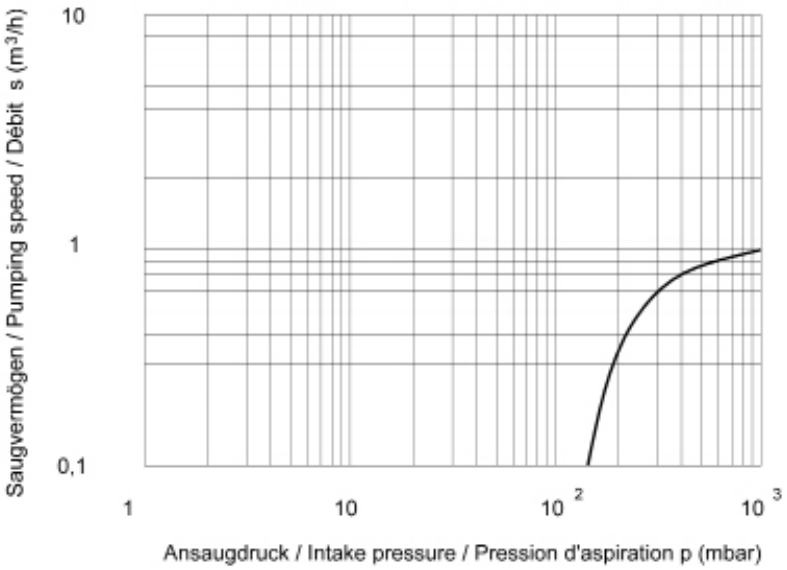


Fig. 3 Intake pressure / Pumping speed

4.3 Device Data

Parameter	Unit	Aspiration Basic System	Aspiration Advantage System
Pumping speed DIN 28432 with speed of 1500rpm	m^3/h	0.78	
	l/min	15	
Ultimate pressure	mbar	<150	
Maximum inlet - / outlet pressure	bar	1	
Intake connection	-	Hose (inside Ø 5mm) with Rapid Action Coupling and Hose Connector	handvac Advantage set
Exhaust connection		Hose nozzle DN 8 for hose inside diameter 8 mm	
Receiving bottle with Inline filter	-	4 Liters, Polypropylene, illuminated from below	
Ambient temperature	°C	+ 15 to + 40	
Maxium medium temperature		+ 40	
Reference surface sound pressure level DIN EN ISO 2151	dB (A)	< 45	
Voltage	V	24	
Fine fuse	A	F 3.15	
Operating mode		S 2	
Type of protection DIN EN 60529		IP 44	
Motor - Class of insulation DIN EN 600034-1		DC	
Dimensions (W/D/H) (without hose + handvac)	mm	395 / 199 / 390	
Weight	kg	7,0	7,2
Cat. No.		15567479	15348191
Aspiration system inclusive Main connection cable IEC with plugs CEE, UK, US	-	Enquirex	x

The information presented in this material is based on technical data and test results of nominal units. It is believed to be accurate and reliable.
It is the responsibility of the user to determine the suitability of the product for the intended use and the user as-sumes all risk and liability whatsoever in connection therewith. Fisher Scientific does not warrant, guarantee or assume any obligation or liability in connection with this information.

5 Installation and Operation

5.1 Unpacking

Carefully unpack the Aspiration System.

Check for:

- Transport damage,
- Conformity with the specifications of the supply contract (model, electrical supply data),
- Completeness of the delivery.

Please inform us without delay if there are discrepancies between the delivery and the con-tractually agreed scope of delivery, or if damage is detected. Please take note of the general terms of business of the manufacturing firm.

In case of a claim under warranty, the device must be returned in packaging that is suitable for protecting it during transport.

5.2 Installation and Connection

Procedure : (see also chapter 5.2.1)
 **Connection handvac** **Connection Aspiration Pump Unit**
Set the Aspiration System on a flat and horizontal surface.
Connect the handvac (A1) to the suction line (A2). (handvac, see also chapter 3.7)
Connect the exhaust pipe to the building ventilation system (B).
If required, connect the foot switch (accessories optional) to the socket (C) provided on the unit.
Set the mode selector switch (D) to «Hand» or «Foot». (see chapter 3.5)
Connect the system to the power supply (E).
Switch on the unit's main switch Power (F).

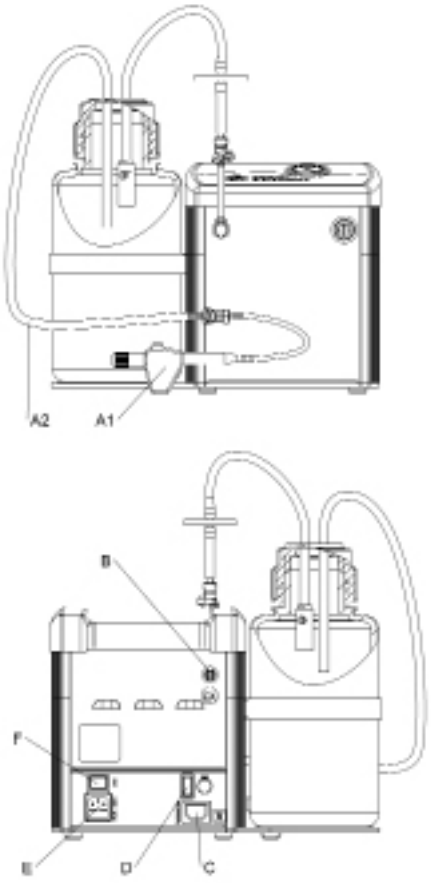
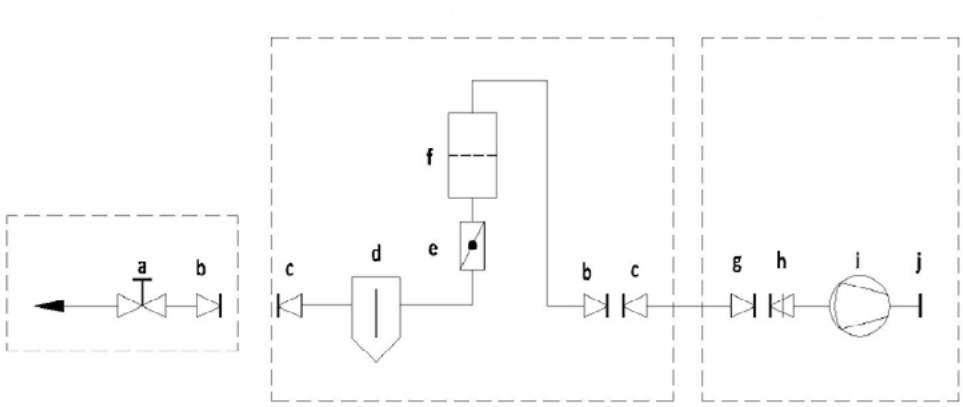


Fig. 4 Aspiration Advantage System - Connections (Bottle: in partly sectional illustration)

5.2.1 Connection schematic



handvac Advantage set		Receiving bottle PP, 4 Litre Cat. No.: 15461934		Aspirator pump unit	
		c	Coupling plud	g	Elbow pump with valve
a	**handvac for aspiration into the bottle**	d	Separator	h	Connecting coupling of the pump
		e	Float valve		
		f	Inline filter 0.22 µm (hydrophoboc)	i	Built-in Diaphragm pump
b	**Rapid action coupling**	b	Rapid action coupling	j	Exhaust connection Hose nozzle DN 8
		c	Coupling plug		

Fig. 5 Connection schematic

5.3 Operation

The suction power can be adjusted using the regulator and vacuum gauge from 150 mbar to approximately 850 mbar to give fine control for delicate cultures.

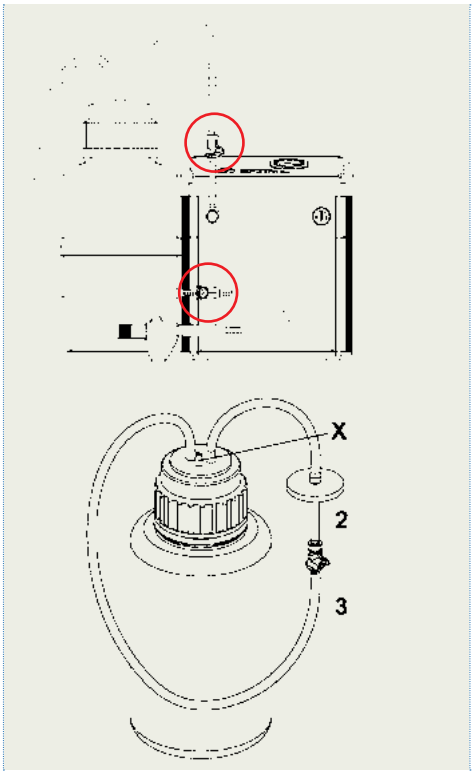
CAUTION !

Observe the basic safety instructions when using the device!

Procedure:

1. The Aspiration System is switched on and off at the operating switch (illuminated rocker switch).
2. Set mode selector switch to «Hand».
3. For operation using the optional foot switch/foot push button, set the selector switch tothe «Foot» position and actuate that switch.
4. A low air pressure is generated in the receiving bottle (illuminated from below).
5. Press the black button at the top side of the handvac to suck the fluid into the bottle.
6. A regulator screw is located at the bottom side of the handvac. It is used to set the extraction speed.
7. For the safety of the user, a 55 mm PTFE filter (if necessary hydrophobic) suitable for the requirements and work task must be to use.

5.3.1 Cleaning and Decontaminating



Atmospheric pressure!

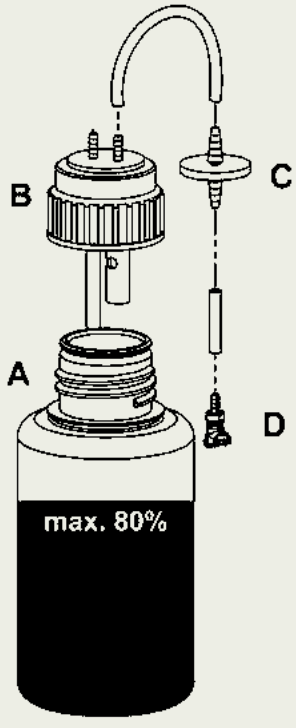
Aerate the bottle, by removing of cap X

Risk of contamination!
Check that is no liquid in the hose.

To ensure that no liquid can escape if the bottle should be removed from the system, you connect using the existing rapid action coupling (coupling + coupling plug) the hoses 2 and 3 together.

- Remove bottle out of the holder
- Unscrew the lid
- Trapped waste (liquids) in accordancewith applicable disposed regulations

Fig. 6 Receiving bottle



Autoclaving:

A - Receiving bottle
B - Lid
C - Inline filter
D - Rapid action coupling

Steam sterilization at 121°C
and 2 bar absolute (1 bar overpressure)
Application time in accordance with DIN 58946 te = 20 minutes

Unscrew or loosen the lid before autoclaving.

Maximum permissible level bottle 80%.

The user should check the effectiveness of sterilization!

Fig. 7 Autoclaving

5.3.2 Exchange of the Inline filter

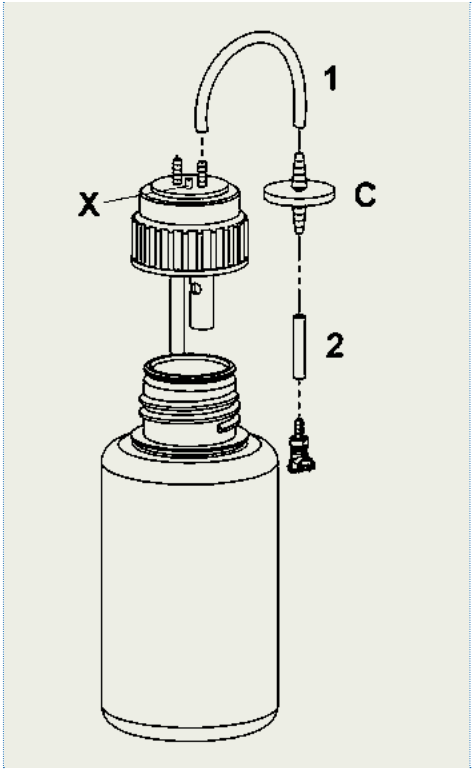


Fig. 8 Exchange of the Inline filter

Atmospheric pressure!

1.Aerate the bottle, by removing of cap X
2. Autoclaving (see Fig. 7)

Risk of contamination!
Check that is no liquid in the hose.

- Remove hose 1 on the inline filter C
- Remove INline filter C of the hose piece 2
- Install new Inline filter C. Note the flow direction labeled «INLET»
- Attaching hose 1 and 2 again

5.4 Storage

The systems are to be stored in a low-dust, interior room within the temperature range from + 5 to + 40 °C and at a relative air humidity < 90%.
Leave the protective elements on the intake and pressure ports. Another equally good pro-tection may be used..

5.5 Scrap Disposal

CAUTION !

The Aspiration System must be disposed of in accordance with the 2012/19/EU guideline and the specific national regulations.
Contaminated systems must be decontaminated according to the laws.

The user is responsible for disposing of the products extracted and decontaminating the re-ceiving bottle and hoses.

Receiving bottle, inline filter and handvac are autoclavable. Y contract the hoses and pipettes are consumable.

A contaminating of the built-in diaphragm pump is to be avoided by use of a suitable filter.

6 Maintenance and Servicing

6.1 General Requirements

Repairs of the Aspiration Systems may only be performed by the manufacturer or authorised workshops. The prerequisites are a complete and factually correct damage report, and a clean and, if necessary, a decontaminate device.

Send in defective devices for repair either to the manufacturer or to an authorised workshop. The information about the contamination or thorough cleaning is legally binding parts of the contract.

6.2 Maintenance Performed by the User

WARNING !

Only perform the work that is described here, and that which is permitted to be done by the user.
All other maintenance and servuce work may only be performed by the manufacturer and a dealer authorised by him.-
Beware of the pump parts being possibly contaminated by hazardous substances.
Wear protective clothing if there is contamination.

The operator may perform maintenance work to the extent indicated below:

- Check the device daily for unusual running noises and heat building up on the surface of the device
- Check the electrical and vacuum connections regularly
- Empty the receiving bottle in a timely manner - (Observe all disposal specifications as applicable to hazardous substances!)
- Check screw connections for tightness and tightened when necessary
- Check vacuum hoses for leaks and, if necessary, replace them
- Check the receiving bottle for leaks and change if necessary
- Exchange the inline filter at regular, defined intervals
- Test performance of the rapid action coupling hose connectors with automatic isolation valves

WARNING !

When repairing contaminated units, be sure to observe the applicable user specifications regarding decontamination as required.
Provide full information about the type of contamination and the used materials and clean the pump thoroughly before handing it over to third parties.

6.3 Maintenance by the Manufacturer

Repairs and maintenance going beyond the extent of the work described in chapter 6.2 or reconditioning or modification may only be performed by the manufacturer or authorised

CAUTION !

The user shall be liable for the consequences of an incorrect damage report or a contaminated pump.
The statements in the damage report are legally binding.

6.4 Contact

For information to warranty issue or technical assistance contact your local Fisher office or visit www.eu.fishersci.com.

7 Troubleshooting

Only manufacturing firm and authorised service workshops may work in the Aspiration System and accessory components during the warranty period.

Trouble	Cause	Remedy	
		By:	with:
Device does not start	**No power supply**	Qualified electrician	Check electrical installation
PBuilt-in diaphragm pump does not generate a vacuum or only an inadequate one	**Connected apparatus and/or connecting elements leaking**	User or Service workshop	Check hose connections, identify the leak and seal it Exchange hoses, seals and / or screw connections, if necessary
	Built-in diaphragm pump dirty or defective		General maintenance / leaning Exchange Built-in diaphragm pumpe
Running noise	**Built-in diaphragm pump dirty**		
Inline filter	**used and/or dirty**	User	Exchange
Receiving bottle	**dirty or leaky**		Cleaning or exchange
Cable(s)	**defective and/or brittle**	Qualified electrician	Exchange of the cable(s)

8 Spare Parts Overview

The spare parts list contains all the spare parts and all the information necessary for ordering.

When ordering, please quote the description, quantity, serial number and order number (if available)!!

CAUTION !

We are not liable for any damage caused by the installation of any parts not suppliedby the manufacturer..

8.1 Spare parts view - Complete unit

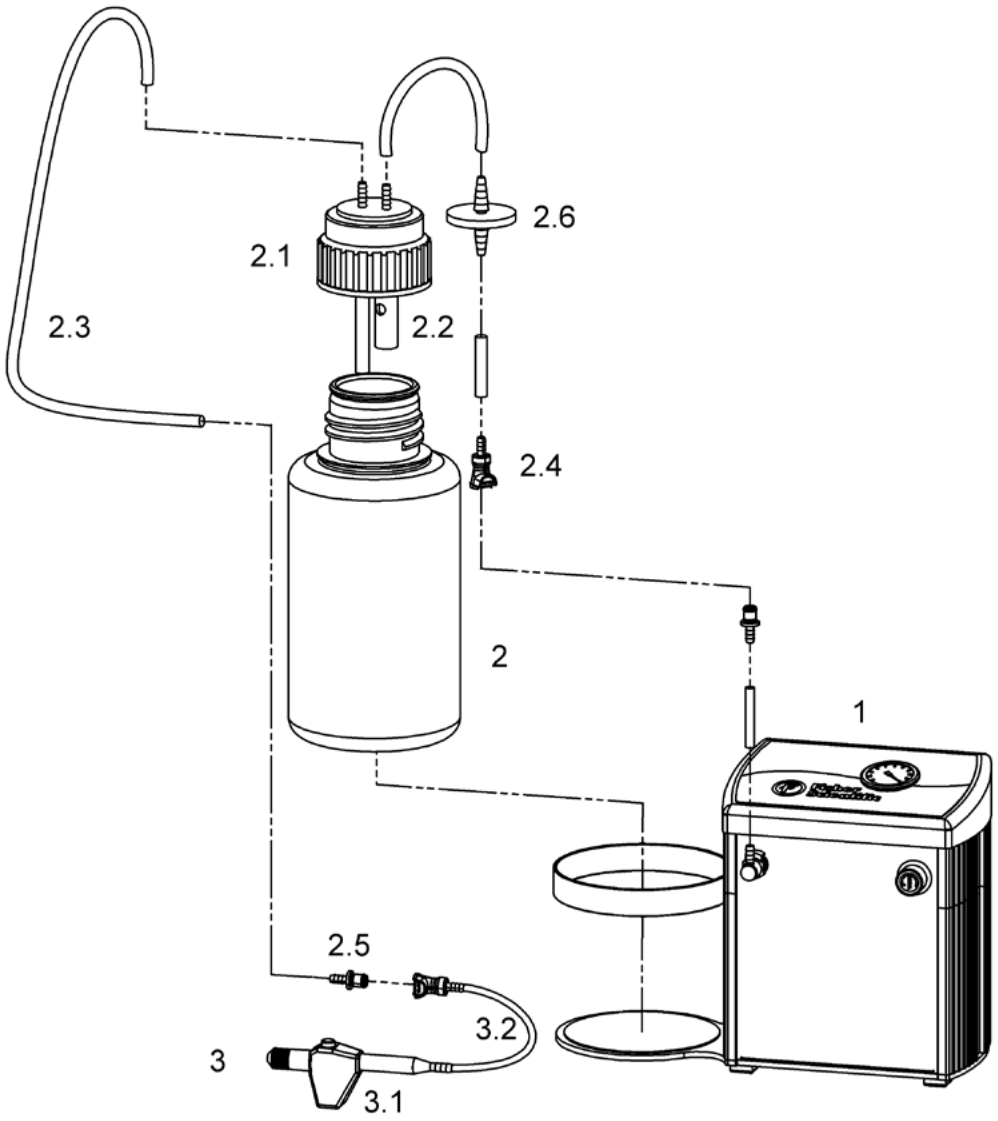


Fig. 9 Explosion view (Aspiration Advantage System) Complete unit)

8.1.1 Spare parts list - Complete unit

Pos.	Designation	Piece	Aspiartion Basic System	Aspiration Advantage System
1	**Aspirator pump unit (spare parts see chapter 8.2)**	**1**	Enquire	Enquire
2	**4 Litre PP Receiving Bottle complete (consisting of pos. 2.1 – 2.6)**	**1**	15461934	15461934
2.1	• **4 Litre PP Receiving Bottle, lid with 2 connections**	**1**	Enquire	Enquire
2.2	• **Float valve (in the lid)**	**1**	Enquire	Enquire
2.3	• **Silicone hose,** • **(6 pieces, total = 1.02 m long)** • **inside diameter 6mm x wall thickness 3mm**	**1**	13168276	13168276
2.4	• **Coupling plug with hose connector**	**1**	15541490	15541490
2.5	• **Rapid action coupling with hose connector**	**1**	15306877	15306877
2.6	• **Inline filter (hydrophobic) 0.22 µm**	**1**	12967914	12967914
3	**handvac Advantage Set (consisting of position: 3.1 – 3.5)**	**1**	-	Enquire
3.1	• **handvac Pipettor with rubber adapter**	**1**	-	Enquire
3.2	• **Silicone hose, (2 m length), inside diameter 4mm x wall thickness 1.5mm**	**1**	-	15432055
3.3	• **Rapid action coupling with hose connector**	**1**	-	15306877
3.4	• **Single Channel Plastic Adapter**	**1**	-	15441934
3.4	• **8-Channel Plastic Adapter with Ejector**	**1**	-	13594340
4	**Silicone hose, (1 m length) inside diameter 5mm x wall thickness 1.5mm**	**1**	Enquire	-
5	**Rapid action coupling with hose connector**	**1**	15306877	-
-	**Mains connection cable IEC with plug CEE (D)**	**1**	10662614	10662614
-	**CMains connection cable IEC with plug BS (UK)**	**1**	15365066	15365066
-	**Mains connection cable IEC with plug NEMA 1-15 (US)**	**1**	Enquire	Enquire

8.2 Spare parts view - Aspirator pump unit

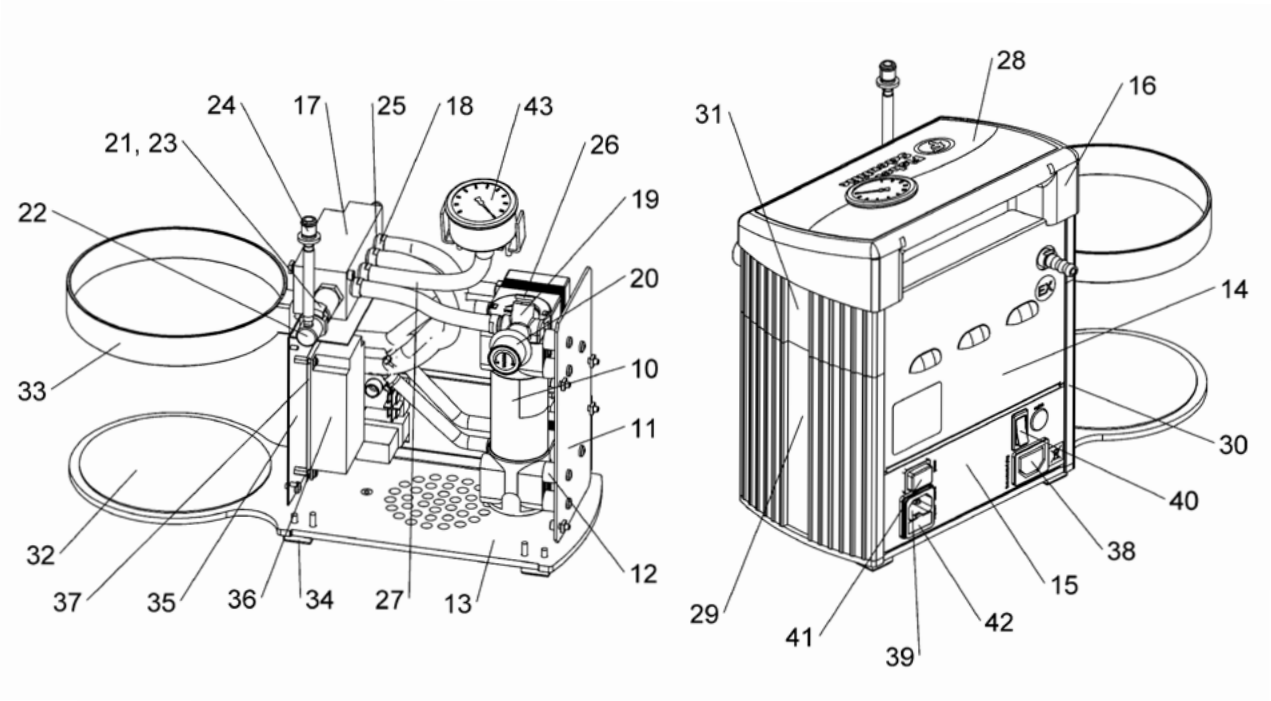


Fig. 10 Explosion view (Aspiration Advantage System) Aspirator pump unit

8.2.1 Spare parts list - Aspirator pump unit

Pos.	Designation	Aspiration Basic System Piece	Aspiration Advantage System Piece
-	**Aspirator pump unit (consisting of position: 10 – 43)**	1	1
10	**Built-in Diaphragm pump 7006**	1	1
11	**Pump Carrier**	1	1
12	**Rubber metal-pad**	6	6
13	**Foot plate**	1	1
14	**Casing**	1	1
15	**Switch panel**	1	1
16	**Casing cover**	1	1
17	**Manifold block**	1	1
18	**Hose nozzle PP, G 1/8“**	3	6
19	**Regulator, Basic body**	-	1
20	**Regulator, Rotary uppers**	-	1
21	**Rapid action coupling PP, 7.2 mm - 1/4“**	1	1
22	**Angle with hose connector PP, 7.2 mm - 1/4“- inside 6.4 mm**	1	1
23	**O-Ring Ø 12 x 2**	1	1
24	**Coupling plug with hose connector**	1	1
25	**O-Ring Ø 8 x 2**	6	8
26	**Plug screw G1/8“ galvanized**	2	2
27	**Silicone hose inside diameter 6mm x wall thickness 3mm**	0.7 m	1.06m
28	**Front foil**	1	1
29	**Aluminium profile 155**	1	1
30	**Aluminium profile 155**	1	1
31	**Aliminium profile 60**	2	2
32	**Rubber plate**	1	1
33	**Guard ring for bottle**	1	1
34	**Casing foot**	5	5
35	**Adapter plate**	1	1
36	**Power pack 24VDC / 4,2A**	1	1
37	**Insulating plate**	1	1
38	**Socket for non-heating apparatus**	1	1
39	**Combination connector**	1	1
40	**Rocker switch 16 (1) A green, 2-pole**	1	1
41	**Rocker switch 4 (1) A green, 2-pole**	1	1
42	**Fine-wire fuse F 3.15 A**	1	1
43	**Bourdon-Manometer G1/8“**	-	1

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