



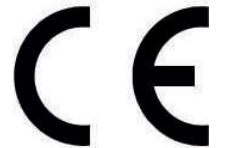
***Componible Modular Filtration Manifolds
and Related Assembly Components***



SISTEMA DI GESTIONE
QUALITÀ CERTIFICATO



UNI EN ISO 9001:2015



CRAMI Group Srl ▶▶▶

Specialized Manifold Producer

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Componible Modular Filtration Manifolds and Related Assembly Components



Our company, present on the microfiltration market since 1961, thanks to continuous contact with customers, it has acquired the experience necessary to overcome all the problems that arise when there is the need to carry out multiple and differentiated analyses with the membrane filtration method.

- In 2004, the first construction of the filtration manifolds began
- In 2010 it was obtained the CE certification with the name **SpeedFlow**
- In 2014 the design was modified making it **modular** the system
- In 2021, the removal of the membrane support disc with a finger was simplified

The main applications are:

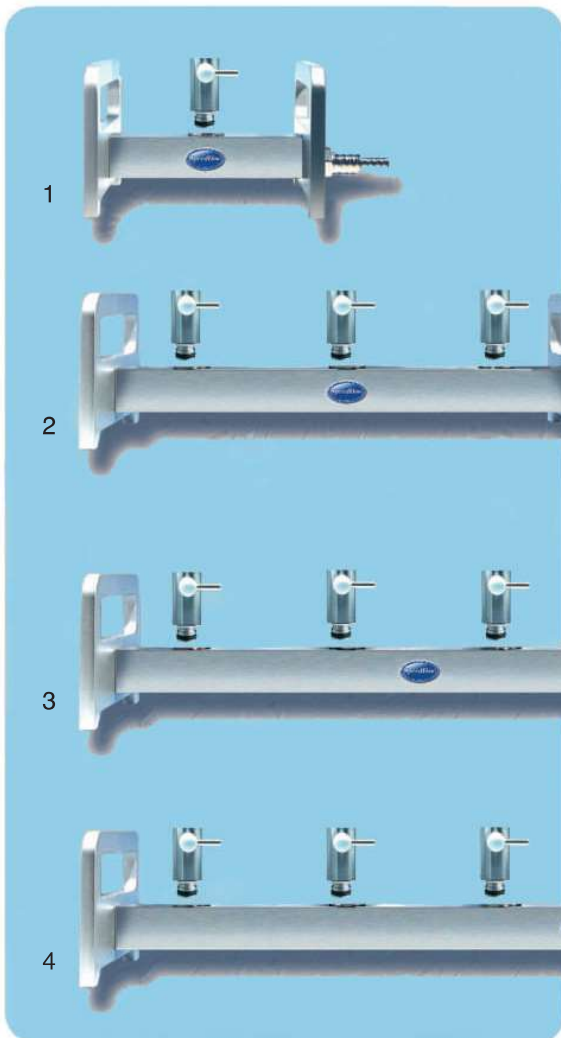
- Microbiological control of liquid samples such as water, wine and soft drinks
- Pharmaceutical control of purified water, bioburden tests and product sterility
- Cosmetic control of water and raw materials
- Control of water in the environment
- Any other membrane filtration

SpeedFlow Manifolds Quality Warranty is CE certification, as machine or quasi machine.



The stainless steel membrane support disc can be removed with a single finger pressure

The various sizes of the basic modular manifolds



The **SpeedFlow** Manifold bases, as shown on left side, are available in four different sizes: **1, 3, 4 and 6 places**. Manifolds that can be easily dismantled for the cleaning operations or to check each part. The assembling is even possible according to user's needs, choosing among various uniform type, different type or mixed form type columns. The assembling choice is easily done when purchasing or in a later time, simply changing a type of column with another type of column

The base structural materials is in satin Stainless Steel with sides handles in anodized aluminium.

One side is fitted with hose-barb for 2 different diameters of vacuum hoses \varnothing 8 and 12 mm, the opposite side is fitted with a stopper. Hose-barb and stopper are interchangeable to facilitate the proximity to the vacuum source.

Inside the horizontal manifold, the pipe exhaust has no dead zones, thus avoiding any possible stagnation of water.

Each part is easily disassembled, inspectable, **autoclavable at 121°C for 30 minutes**, washable, sanitizable or sterilizable.

The internal materials in contact are: Stainless steel Aisi 304, PTFE and o-ring in FPM.



Purchase codes

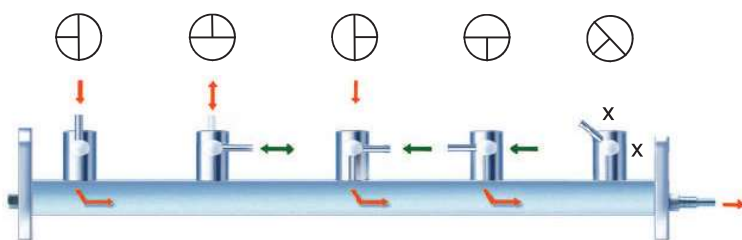
Select the suitable manifold **size** then make your columns choice among the ones shown in the following pages.

- 1 - **247310** – 1 place manifold base (length mm 240)
- 2 - **247330** – 3 places manifold base (length mm 420)
- 3 - **247340** – 4 places manifold base (length mm 560)
- 4 - **247360** – 6 places manifold base (length mm 780)

5 – Side detail with hose-barb
(width mm 160 x H mm 100)

6 – Side detail with stopper

7 – Columns joint detail seen back-side, with stop hexagon socket screw and its allen screw on manifold base



Different tap positions with flux directions indication

Different columns for the assembling on manifold base



Different columns type in polished Stainless Steel are available (see illustration). Each column is supplied with a tap to close the vacuum or for the changing of the flux direction (see page 4). The tap is made in PTFE with a SS lever.

Columns to choose for mounting on the Manifold-base illustrated on the previous page 4

249306 - Column **KM-N**

see page 6

Universal – Conical shaped for stopper #8 (with higher measure of Ø 41 mm) on which insert a filtration device.

249325 - Column **RA-S2**

see page 7

Universal - Mushroom shaped with **removable** SS sintered disc Ø 40 mm. Funnels for membrane with Ø 47 or 50 mm are directly mounted on it.

249328 - Column **KM-A2**

see page 8

Special - Mushroom shaped without SS disc. For filtering funnels with incorporated membrane by **Crami**, **Pall** and **Sartorius** companies.

249332 - Column **RA-A2**

see page 8

Special - like the previous one but with **removable** sintered stainless steel disc Ø 40 mm membrane support disc. For filtering disposable funnels with incorporated membrane by **Crami** and **Sartorius** companies.

249321 - Column **RA-M3**

see page 9

Special - Mushroom shaped with **removable** SS net disc Ø 40 mm membrane support disc and external silicone o-ring. Plastic funnel with separate membrane by **Millipore** and **Crami** (without O-ring) are directly mounted on it.

249304 - Column **RA-E**

see page 9

Special - Mushroom shaped with SS net disc Ø 19 mm. It accepts funnels for membrane Ø 25 mm.

249309 - Column **KM-B**

see page 10

Special - Mushroom shaped with polished plain and central suction hole. Graduated Monitor (internal diameter 46,5 mm) produced by **Crami**, **Sartorius**, **Bio-Set** or other brands are directly mounted on it.

249310 - Column **KM-P**

see page 10

Special - Hose barb shaped for vacuum hose with internal Ø 8 or 12 mm, to connect filtration instruments or separated and independent devices.

Removable disc with a finger



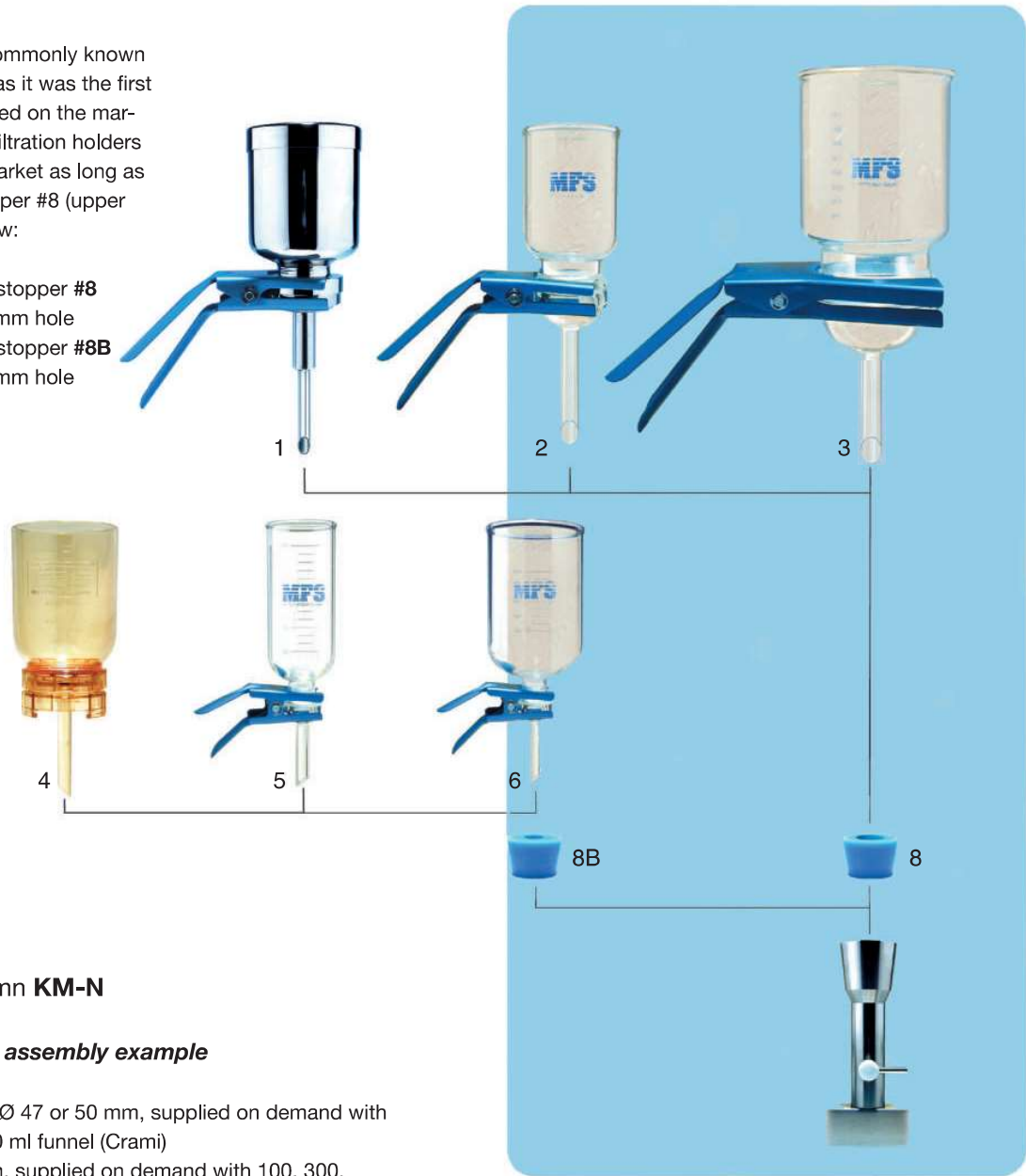
Columns common spare parts

- 249221 - PTFE tap with SS lever, complete with washers and O-ring
- 249221.1 - PTFE tap complete with washers and O-ring, without lever
- 249304.1 - O-ring on column joint (pack of 6 pcs)
- 249304.2 - PTFE gasket Ø 27 mm on column base (pack of 6 pcs)

KM-N • Universal column for assembled filter holders

This is the most commonly known and used column as it was the first one to be introduced on the market. It accepts all filtration holders available on the market as long as slipped into a stopper #8 (upper Ø 41 mm), as follow:

- 249200 - Silicone stopper #8 with 15 mm hole
- 249201 - Silicone stopper #8B with 10 mm hole



249306 - Column KM-N

Various holders assembly example

- 1 - Stainless steel Ø 47 or 50 mm, supplied on demand with 100, 250 or 500 ml funnel (Crami)
- 2 - Glass Ø 47 mm, supplied on demand with 100, 300, 500 or 1000 ml funnel (Advantec - Crami)
- 3 - Glass Ø 90 mm, with 1000 ml funnel (Advantec - Crami)
- 4 - Polysulfone Ø 47 mm, supplied on demand with 300 or 500 ml funnel (Advantec - Crami)
- 5 - Glass Ø 13 mm, with 100, 500 or 1000 ml funnel (Advantec-Crami)
- 6 - Glass Ø 25 mm, with 15, 150 or 300 ml funnel (Advantec-Crami)

Note: all these holders are supplied with stopper #8 or #8B

RA-S2 • Universal column for \varnothing 47 or 50 mm membrane



This mushroom shaped column with polished inner part is supplied with a membrane support disc in sintered SS \varnothing 40 mm removable with a finger.

249325 - Column RA-S2

On this column it's possible to mount funnels with different form, held by a clamp (unless different descriptions), as in the following list:

- 1 - **249070** (Advantec) - Glass **100** ml, graduated
- 2 - **249120** (Advantec) - Glass **300** ml, graduated
- 3 - **249080** (Advantec) - Glass **500** ml, graduated
- 4 - **249085** (Advantec) - Glass **1000** ml, graduated
- 5 - **249180** (Crami) - Stainless Steel **500** ml, (optional lid), graduated 250 e 500 ml
- 6 - **249185** (Crami) - Stainless Steel **250** ml, (optional lid) clamp not required, graduated every 50 ml
- 7 - **249190** (Crami) - Stainless Steel **100** ml, clamp not required, graduated at 50 ml
- 8 - **249170** (Advantec) - Blue alluminium clamp
- 9 - **249090** (Advantec) - Silicone lid (optional) for 249120, 249080
- 10 - **249186** (Crami) - Stainless Steel flat lid \varnothing 95 mm (optional) for 249180
- 11 - **249187** (Crami) - Stainless Steel flat lid \varnothing 81 mm (optional) for 249185

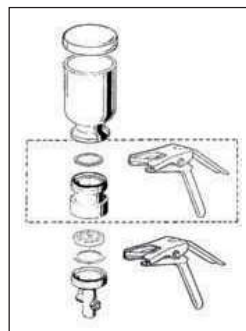
Spare parts

249111 – Sintered SS disc \varnothing 40 mm

Prefilter devices, SS PR-50 and glass PR-47

This accessory provides a physical separation on two filters which have been set up in series, to clarify first then to refine. They accepts membranes \varnothing 47 or 50 mm and are fitted with a standard clamp.

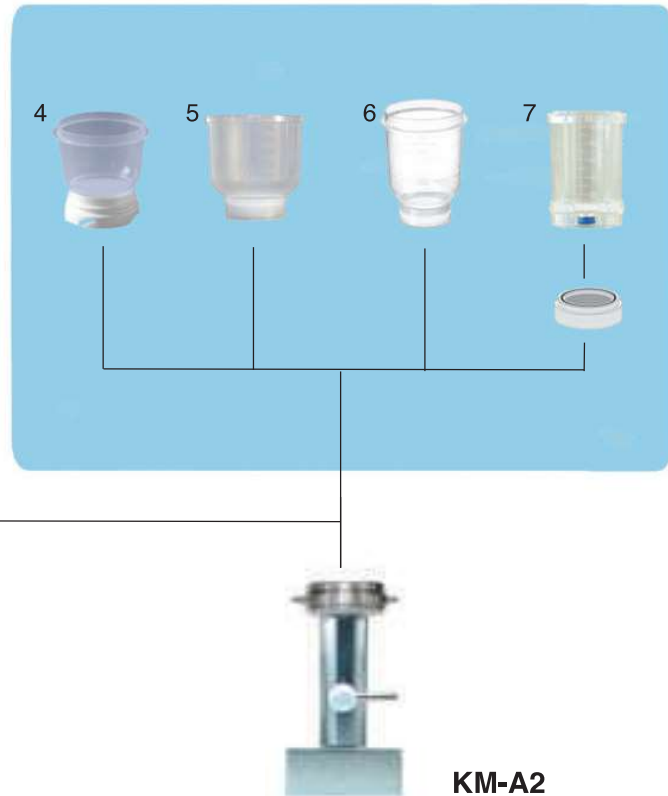
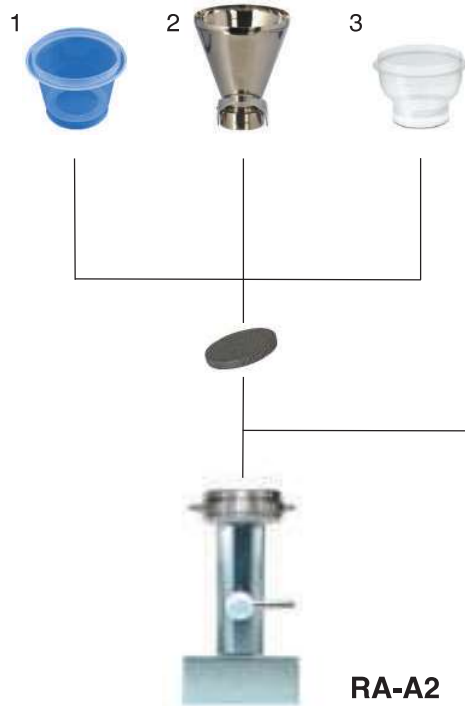
- 1 - **PR-50** – code **245331** – SS prefilter device, including SS net disc \varnothing 41 mm (code 249112) and clamp (code 249170).
- 2 - **PR-47** – code **245318** – Glass prefilter device, including SS net disc \varnothing 41 mm (code 249112) and clamp (code 249170).



Column RA-A2 and Column KM-A2 for funnels by Crami, Pall and Sartorius



Removable disc with a finger



This mushroom shaped column with polished inner part is supplied **with** a membrane support disc in sintered SS net Ø 40 mm, removable with a finger

249332 - Column RA-A2

On this column it's possible to mount a range of funnels as follow:

- 1 - **Ascle®U** 100 o 250 (Crami), see page 13
- 2 - **Microsart®** SS Funnels 100 or 500 ml (Sartorius)
- 3 - **Microsart®** Sterile Funnels 100 or 250 ml (Sartorius) code 16A07

Spare parts

249111 - Sintered Stainless Steel disc Ø 40mm

This column identical to the previous one is supplied **without** a membrane disc support

249328 - Column KM-A2

It accepts devices equipped with filtering membrane as follow :

- 4 - **Ascle V** 100 or 250 (Crami)
- 5 - **MicroFunnel®** 100 or 300 ml with filtering membrane incorporated (Pall Life Science)
- 6 - **Microsart®Filter** 100 or 250 ml with filtering membrane incorporated (Sartorius)
- 7 - **Biosart®** 100 Monitors, supplied with its adapter, code 16424 (Sartorius)

RA-M3 • Column for funnels by Microfil® 100 e 250

This mushroom shaped column with polished inner part is supplied with a disc holder in sintered SS membrane support Ø 40 mm removable with a finger.



Removable disc with a finger

249321 - Column RA-M3

This column accepts **Microfil®** (Millipore Company), funnels **100** or **250** ml capacity, fixed with a light fingers pressure and Ascle® by **Crami** (without O-rings)

Spare parts

249111 - Sintered Stainless Steel disc
Ø 40 mm

00116 - Silicone O-ring OR-21S
(Ø int. 40,95 mm - sec. Ø 2,62 mm)



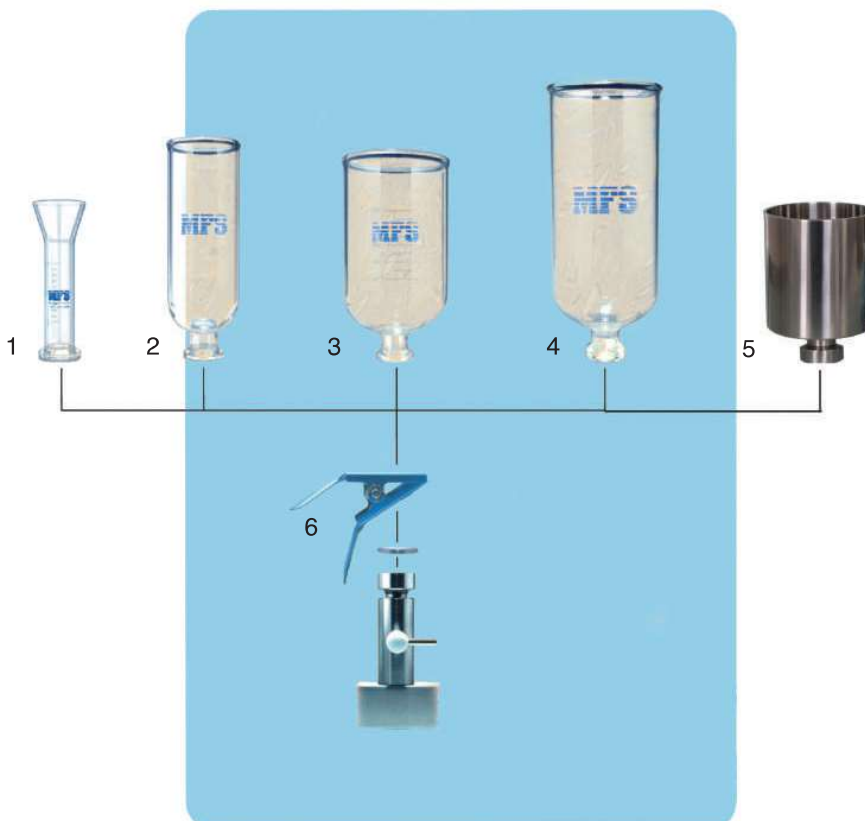
RA-E • Universal column for ø 25 mm membrane

This mushroom shaped column with polished inner part is supplied with a disc in SS net Ø 19 mm as support of membrane.

249304 - Column RA-E

This column accepts different type of funnels, held by a clamp, as listed below:

- 1 - **245111** (Advantec)
Glass **15** ml, graduated
- 2 - **245115** (Advantec)
Glass **150** ml, graduated
- 3 - **245114** (Advantec)
Glass **300** ml, graduated
- 4 - **245022** (Advantec)
Glass **500** ml, graduated
- 5 - **245051R** Stainless Steel,
250 ml graduated
- 6 - **245113** (Advantec)
Blue aluminium clamp



Spare parts

245124 - Stainless Steel net disc
Ø 19 mm

KM-B • Column for Monitors BioBatt 100 and BioSart® 100

249309 - Column KM-B

On this mushroom shaped column are mounted graduated filtration devices BioBatt 100 (Crami, see page 13), Bio-Set, BioSart®100 (Sartorius), Whatman or equivalent by other companies, with inner Ø 46,5. Devices are mounted simply by a light finger pressure.

Spare parts

00116 - Silicone O-ring OR-21S
(Ø int. 40,95 mm - sec. Ø 2,62 mm)



Bio-Bact 100 mounted



Pouring the sample



Removing the cylinder



Petri ready for incubation

KM-P • column to connect remote devices

249310 - Column KM-P

This column is Ø 8 or 12 mm hose barb shaped. This allows an independent connection with different remote devices that need vacuum for its performance.



KMPC • Manifolds in PVC for applications with corrosive products

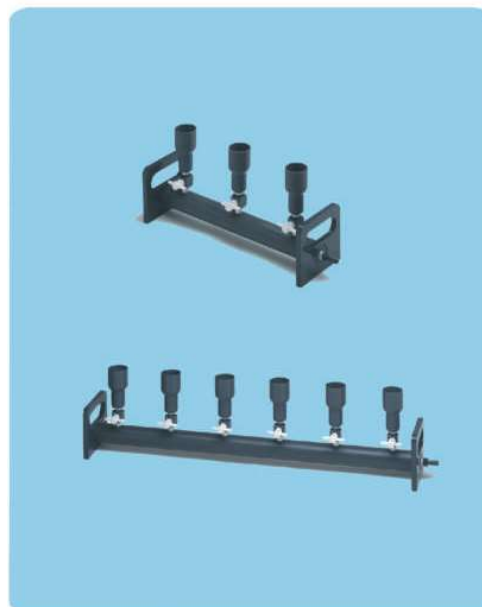
This universal type manifold is made of PVC and taps in PTFE. The shape of its columns provides a cone-shaped mouth of the size for silicone stopper of type #8 with a diameter greater than 41 mm, that are commonly used to mount filter devices that have a conical shaped membrane support base with a stem that fits into the cap.

Main application is the filtration of aggressive liquids that are not compatible with stainless steel, together with glass or plastic filtering devices such as PES, PP, PPSU or PC.

They are available in two sizes: with 3 or 6 places, with hose connection to the drain and plug on the opposite side, which can be reversed according to the position of the vacuum source. Each column has a shut-off tap.

246110 - Manifold **KMPC3** in PVC **3** places, complete and ready to use. Dimensions: length mm 420, width 150 mm, H 170 mm

246120 - Manifold **KMPC6**, in PVC **6** places, complete and ready to use. Dimensions: length mm 780, width 150 mm, H 170 mm



As a source of vacuum it is advisable to use pumps with a body anti-corrosion with parts in contact in PTFE (see page 12)

Glass or PP vacuum flasks are recommended to collect the filtrate (see page 14)

Multivac • Manifolds in light aluminum alloy

This type of universal ramp is made of light aluminum alloy, completely removable for internal inspections and individual tap on the columns, which provide a cone mouth of the size for silicone stopper of type # 8 with a diameter greater than 41 mm, that are commonly used to mount filtering devices that have a conical shaped membrane support base with a stem that fits into the cap.

To maintain the lightness of the system, it is advisable to use plastic filtration devices such as PES, PP, PPSU or PC.

They are available in 2 sizes: with 3 or 6 places, with hose connection to the drain and stopper on the opposite side, which can be reversed according to the position of the vacuum source. Each column has a shut-off tap.

22M310AL - Multivac manifold **3** places, complete and ready to use. Dimensions: length mm 480, width 130 mm, H 160 mm

22M610AL - Multivac Manifold, **6** places, complete and ready to use. Dimensions: length mm 850, width 130 mm, H 160 mm



Vacuum generating pumps and pump for liquids suitable for various manifolds types



Dry type RCK series

Pumps equipped with a "Prote" filter, which purifies the incoming air, retains drops of moisture and through a valve prevents a liquid from entering the pump body. Equipped with vacuum gauge and vacuum regulator.

- "No kind of pollution"
- CE certified



Recommended application:

- with SS or aluminium manifolds
- RCK300, for 1 or 3 places manifolds
- RCK400, for 4 or 6 places manifolds
- RCK410, with dense product

TECHNICAL DATA

MODEL	RCK300	RCK400	RCK410
Code	225300	225400	225410
Final vacuum (mbar)	105	105	30
Flow rates in liters/min	20	34	20
Air/Humidity for Prote filter	yes	yes	yes
Vacuum adjustment	yes	yes	yes
Liquid-saving valve	yes	yes	yes
Pipe connection (Ø mm)	8	8	8
Noise (dB)	50	52	52
Net weight (kg)	4,1	5,2	5,2
Voltage V/Hz	220/50	220/50	220/50
Dimension (WxLxH in mm)	268x135x204	310x135x204	310x135x204



Dry type RCK-C and CMK series

The RCK-C series has the parts in contact in PTFE, the CMK has the whole body in PTFE. Equipped with a trap for incoming vapors, vacuum gauge and vacuum regulator

- "No kind of pollution"
- CE certified



Recommended application:

- with PVC or SS manifolds
- RCK300C, for 1 or 3 places manifolds
- RCK400C, for 4 or 6 places manifolds
- CMK411, for the whole manifold series

MODEL	RCK300C	RCK400C	CMK411
Code	22530C	22540C	22541T
Parts in contact with fluid	PTFE	PTFE	PTFE
Final vacuum (mbar)	145	105	10
Flow rates in liters/min	20	31	18
Vapor trap	yes	yes	yes
Vacuum adjustment	yes	yes	yes
Pipe connection (Ø mm)	8	8	8
Carrying handle	yes	yes	no
Noise (dB)	50	52	52
Net weight (kg)	4,1	5,7	7,4
Voltage V/Hz	220/50	220/50	220/50
Dimension (WxLxH in mm)	285x135x204	310x135x204	262x236x193

ALLIGATOR membrane pump for liquids



This special pump for liquids is particularly designed to be connected to filtration manifolds and directly drain the filtered liquid into a laboratory sink or into a separate container

- Simplify the dexterity after the filtration
- The space dedicated to traditional bottle systems decreases
- "No kind of pollution"
- IP64 protection
- Complies with the new ISO standard 8199 on microbiology
- CE certified

MODEL	ALLIGATOR
Code	225200
Parts in contact with fluid	SS316, FKM, PP, PPS, silicone
Final vacuum (mbar)	313
Max liquid flow	4,5 liters/min
Max engine power	60W DC
Engine type	without blades
Noise (dB)	60
Pipe connection	hose nozzle Ø 8 mm
Thermal protection sensor	yes
Power supply	DC 24V=, 1,8A
Net weight (kg)	2,4 kg
Dimension(WxLxH in mm)	235x190x202

Ascle® U - PP disposable funnels with separated membrane

Fast and safe filtering system for bacteriological filtration



THECNICAL DATA

- PP funnels 100 and 200 capacity, graduated
- In packs of 100 pieces divided into 10 sterile boxes of 10 pieces
- Available with separate membranes in single sterile bag
- Disposable type, easy to use

Used on column **RA-2** see page 8 (code 249332)

Codes to order

PP funnels 100 or 250 ml, sterile for gamma irradiation

Code	Capacity	Packaging
CB-A47U-100	100ml	100 sterile
CB-A47U-250	250ml	100 sterile *

Combinable with membranes in EMC (mixed cellulose esters) sterile in single pack of 100

Code	porosity μ	\varnothing mm	Colour
A020H47A	0,2	47	white/squared *
A045H47A	0,45	47	white/squared *
A080H47A	0,8	47	white/squared *
A045R047A	0,45	47	black/squared
A080R047A	0,8	47	black/squared

For more details see *Catalogo di Microfiltrazione* a pag. 23

Ascle® V - Single use funnels with incorporated membrane

Fast and safe filtering system for bacteriological filtration



THECNICAL DATA

- Sterile funnels 100 or 250 ml
- In packs of 75 pieces for 100 ml or 50 pieces for 250 ml divided into individual sterile boxes
- Squared membranes are incorporated and ready for use
- Disposable type, easy to use
- Used on columns **KM-A2** see page 8 (code 249328) or on **RA-A2** removing the support disc

Codes to order

Funnels 100 ml and membrane

Code	porosity μ	\varnothing mm	Colour
CB-A47V100GM22	0,22	47	white
CB-A47V100GM45	0,45	47	white
CB-A47V100LG22	0,22	47	black
CB-A47V100LG45	0,45	47	black

Funnels 250 ml and membrane

Code	porosity μ	\varnothing mm	Colour
CB-A47V250GM22	0,22	47	white
CB-A47V250GM45	0,45	47	white *
CB-A47V250LG22	0,22	47	black
CB-A47V250LG45	0,45	47	black

For more details see *Catalogo di Microfiltrazione* a pag. 23

Bio-Bact 100 - Monitors with incorporated membrane for bacteriological analyzes

Quick and safe filtering system for filtration and transformation into a Petri dish, ready for incubation.



THECNICAL DATA

- Funnels 100 ml, composed of base with membrane, absorbent cardboard, graduated cylinder with lid and adapter for caps with hole (all in a sterile bag)
- In packs of 50 pieces divided into individual sterile boxes
- Membranes of \varnothing 47 are squared, sterile, incorporated and ready for use
- Disposable type, easy to use

Used on column **KM-B**, see page 11 (code 249309)

Codes to order

Bio-Bact 100 funnels

Code	μ	\varnothing mm	Colour
BB-47MCE022SW	0,22	47	white
BB-47MCE045SW	0,45	47	white *
BB-47MCE080SW	0,8	47	white
BB-47MCE045SB	0,45	47	black
BB-47MCE080SB	0,8	47	black
BB-47PES010SW	0,1	47	white
BB-47PES022SW	0,22	47	white
BB-47PES045SW	0,45	47	white

(*) prompt delivery

For more details see *Catalogo di Microfiltrazione* a pag. 24

Accessories and auxiliaries for filtration manifolds

Collection bottles for filtrate



1) **22548R** - Bottle in PP (polypropylene) of 4 liters capacity - with pipe connections Ø 8 mm, with overflow valve and drain tube at the base for emptying - Autoclavable



2) Glass vacuum bottles for caps #16
06004 - 5 L capacity, with hosebarb Ø 8 mm
06005 - 10 L capacity, with hosebarb Ø 8 mm
 3) Bottle as per point 2) mounted with stopper as per point 4), as follow:

4) **04016** Para rubber stopper #16 to empty the vacuum bottles - complete with two stainless steel connections Ø 8 mm - vent tap and a series of pipes and accessories



5) **04038** - Glass bottle GL45 series of 5 L capacity (in the picture already mounted with the adapter 22565P)
 6) **22565P** - Adapter for GL45 bottles - completed with #8 stopper - SS connection and 2 quick couplings for Ø 8 mm pipe for an easy disassembly. This adapter can be used with all GL45 bottles of any capacity

Flasks and trap vessels

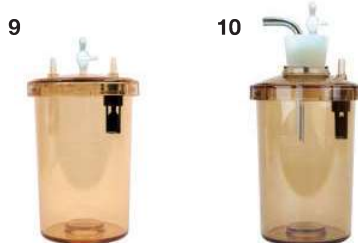


7) Vacuum flasks with silicone cap complete with connection for Ø 8 mm tubes and tap + non-return valve on the hosebarb

06011 - Glass flask 1 L - mounted with silicone stopper #12 (04014)
06012 - Glass flask 1 L - mounted with silicone stopper #14 (04012)



8) **22515B** - Glass vacuum 1 L flask with silicon drain at the base
249201P - silicone stopper # 8 with SS connection for 8 mm pipes
22515S - Silicone base for stability



9) **22512RT** - 1200 ml capacity PES container, complete with IN / OUT connections for Ø 8 mm pipes, air valve and overflow valve
 10) **22511RC** - 1200 ml capacity PC container, with overflow valve complete with **04011T** silicone cap #11, stainless steel connection for pipes, air tap

Accessories



11) **247310K2** - Kit consisting of 1 stainless steel hose connector and 15 cm Ø 8 mm rubber vacuum hose. It is used to connect 2 manifolds in series, in order to use a single vacuum source



12) Vacuum tubes for connection of accessories
07104 - silicone - Ø 8x15 mm
07201 - para rubber - Ø 8x16 mm

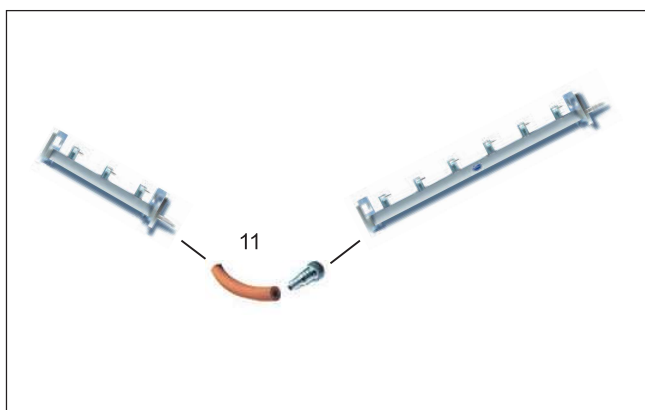
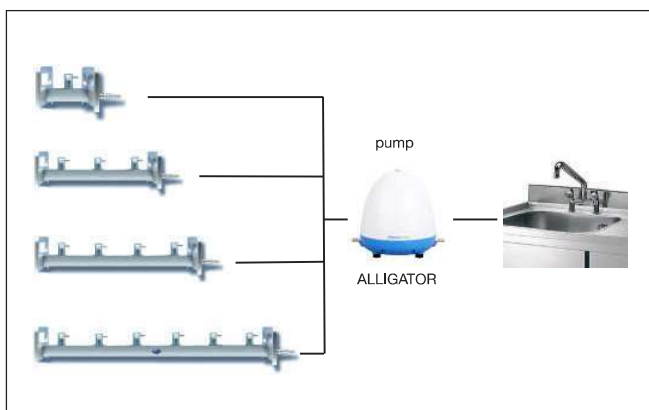
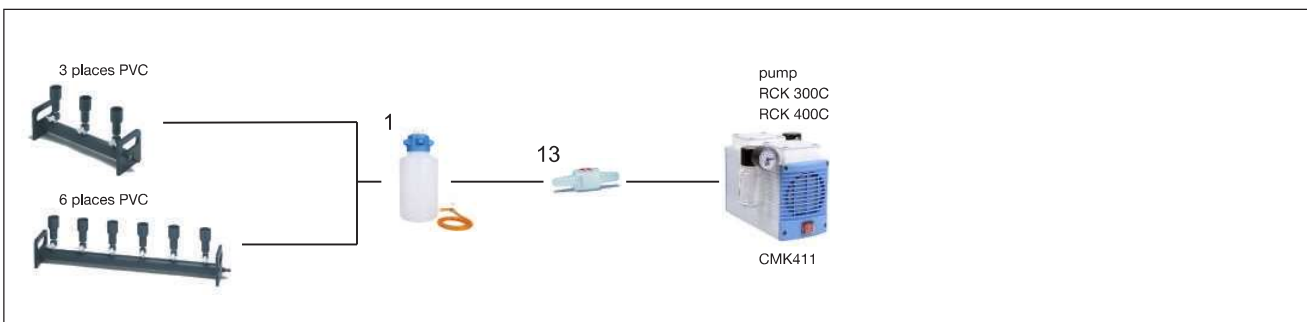
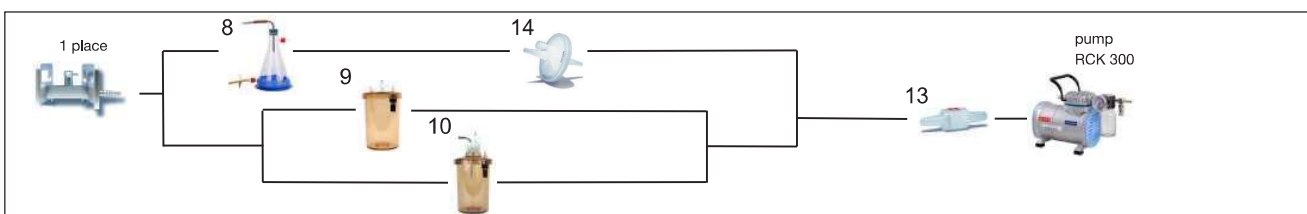
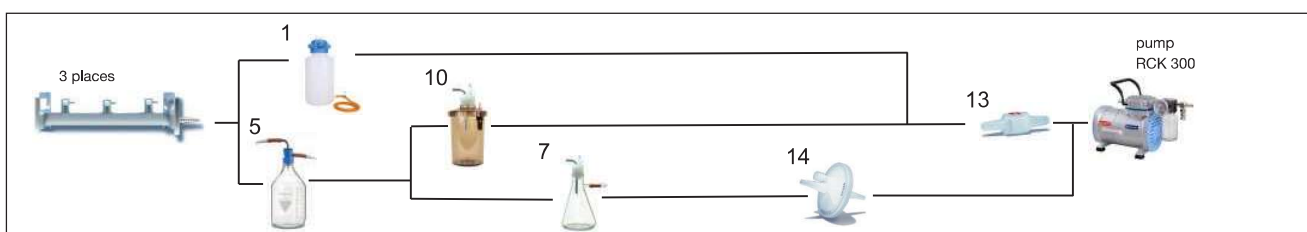
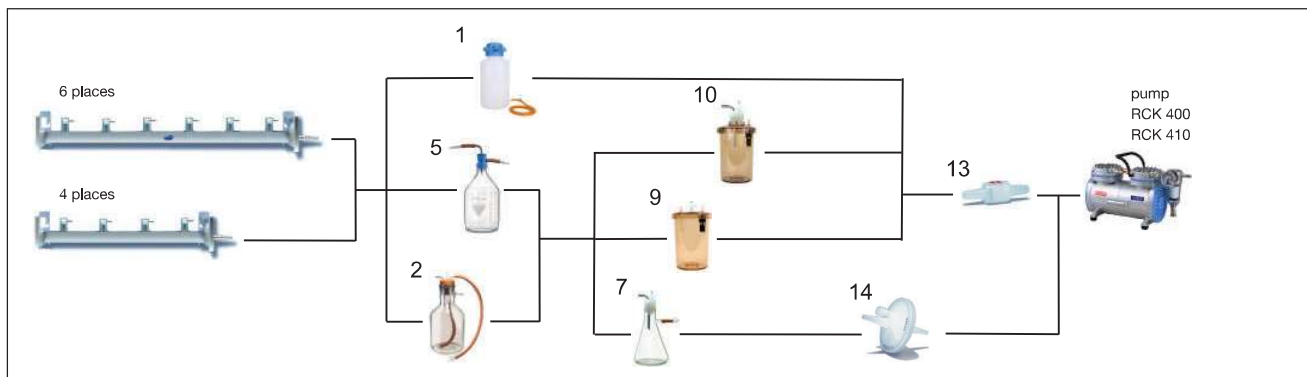


13) **22795** - Plastic non-return valve for pipes Ø 8 mm - useful for blocking the return flow



14) **50JP050AN** - Hydrophobic filter in PTFE with porosity 0.5 µ and Ø 50 mm - to protect an unprotected pump from a flow of water (in packs of 10 pieces)

Various recommended assemblies types





SISTEMA DI GESTIONE
QUALITÀ CERTIFICATO
CQY
CERTQUALITY
UNI EN ISO 9001:2015



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