

FLC VAC[®]








DISPOSABLE CONTAINERS SYSTEM
FOR THE COLLECTION OF SUCTIONED FLUIDS
WITH HYDROPHOBIC VALVE

flow-meter[™]
ENGINEERING REVOLUTION IN MEDICAL TECHNOLOGY

FLOVAC® disposable containers are designed and manufactured for “high flow and high vacuum” applications in medical suction field to collect the organic fluids.

This system is the best expression of safety, practicality and simplicity of use, both for the operators and for hospital plants and environment, thanks to the use of absolutely reliable manufacturing materials. The hermetic lid sealing makes the disposal procedure particularly hygienic, simple and safe for the patient and for the staff charged to remove and handle the device. The replacement operations are very simple, reducing to the minimum the plant stops in each application. Moreover, **flow-meter™** designed and developed a complete range of accessories aimed at covering the most of hospital applications.

Practicality, Safety, Simplicity granted by:

-  **Disposable and closed system** to prevent any contamination to the plant, to the patient and to the medical staff.
-  **Different ports size** to avoid any connection mismatch.
-  **Easy identification of the ports** thanks to color code and ports function engraved on the lid.
-  **Anti-reflux system** to prevent patient and operator to come in touch with contaminated fluids in case of spillage through the ports happening during the hose disconnection. An optional non-return valve on the **PATIENT** port is also available for additional safety in the most critical applications.
-  **Hydrophobic, antibacterial and antiviral filter** acting as a shut off-valve and deactivating the suction when the container is full. This filter is an impenetrable barrier giving a bacterial and viral protection towards the hospital vacuum plant or any other suction equipment. If compared to normal mechanical overflow systems, this filter also stops smoke from electro-surgery, foams and nebulized particles.



CERTIFICATIONS

All medical devices manufactured by **flow-meter™** respect and comply the requirements of Regulation (EU) MDR 2017/745, and meet the technical specifications imposed by national and international reference Standards.



FLC·VAC®

2 versions

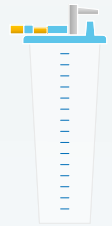
LINER

soft bag hermetically welded to a rigid lid to be used with its reusable support jar



CANISTER

single-use rigid canister coupled with a lid hermetically fixed on it



Supplied (option) in package with 1.8 m hose or with 1.8 m hose and vacuum breaker

Equipped with ports allowing the connection to the suction line (female), to the **PATIENT** (male connection), plus the **TANDEM** port, to increase the collection capacity by using two or more containers connected in cascade

Equipped with an anti-reflux, hydrophobic and antibacterial filter to protect the suction equipment or the vacuum plant. This filter acts also as an overflow valve, deactivating the suction when the container is full in cascade



COMPLETE FLOVAC® LINE WITH HYDROPHOBIC FILTER

flow-meter™ offers a structured range of disposable collection containers, providing different capacities and configurations.



FLOVAC®

practicality **safety** *simplicity*

from
powder



to gel

FLOVAC® LINER

The **FLOVAC® LINER** consists of a soft bag hermetically welded to a rigid lid. **LINERS** are available in 4 capacities and they work when inserted in the related PC reusable and autoclavable rigid containers.

LINERS can be supplied in different configurations: liner only, liner with prefilled gelling kit, liner with 1.8 m hose, liner with 1.8 m hose and vacuum breaker.

The **FLOVAC® LINER** has a soft but extremely resistant bag, allowing an easy extension by the operator, highly simplifying the insertion of the same into the supporting jar while assembling the system. This action is definitively important for safety and efficiency of the **LINER** for suction applications.

A regular adherence of the **LINER** to the inner surface of the supporting jar avoids the mechanical stress on the bag generated by the **VACUUM** and allows a measurement accuracy on the graduated scale and a correct intervention of the overflow system.



The supporting jars have a conical shape to get small size packaging, to save transport costs and space during the storage. To avoid jars getting stuck or unexpected inner scraping, four ribs inside the bottom area stop properly the jar position when one inside the other. A graduated scale printed on the supporting reusable jar allows an easy monitoring of the volume of the suctioned fluid.

AVAILABLE CAPACITIES	1.0 L - 1.5 L - 2.0 L - 3.0 L
SOFT BAG MATERIAL	LDPE (Low Density Polyethylene)
LID	HDPE (High Density Polyethylene)
REUSABLE JAR GRADUATION INTERVAL	50 ml
MAXIMUM SUCTION DEPRESSION	-950 mbar/5 min.
Individually packed in blisters	



Soft and resistant bag made in LDPE (Low Density Polyethylene) tested to resist to accidental fall and to the heaviest conditions.





- Sacchetto per contenitore di fluidi aspirati
- Collection liner for fluids suction canisters
- Poche de recueil pour bouchons pour fluides aspirés
- Flüssigkeitenabsaugbeutel
- Bolsa para el recipiente de succión de fluidos
- Σάκος για δοχείο αναρρόφησης υγρών
- Bolsa para frasco de fluidos aspirados
- Jednorazový vak na sekret

www.flowmeter.it

CE 0476

2000ml

REF	000036011
LOT	C0672002
	2027-07

flow-meter™
ENGINEERING REVOLUTION IN MEDICAL TECHNOLOGY

Flow Meter S.p.A.
Via del Lino, 6
24040 Levate - Bergamo - ITALY

The **FLOVAC® LINER** is individually packed in a blister giving all the indications of size, lot number, expiry date and production date. The individual packaging, besides providing protection and hygiene of the single device until its opening and use, also gives evidence of an intact and perfectly preserved product and facilitates the distribution of the individual units in the different hospital departments.



All sizes are also available with pre-filled gelling powder to grant further safety.

For detailed information page 21



When **CANISTER** is in use, it is also possible to jellify the suctioned liquids by inserting a gelling powder bag into the jar before fastening the lid.

A graduated scale, with 50 ml intervals, printed on the jar allows an easy monitoring of the suctioned volume. In case of the 0.5 L capacity, graduation intervals are 5 ml up to 50 ml / 10 ml up to 300 ml / 50 ml up to 500 ml thus granting the most accurate reading in applications where critical measures of the suctioned fluids are required.



FLOVAC® CANISTER

The **FLOVAC® CANISTER** is a complete disposable system. It consists of a single-use rigid canister coupled with a lid hermetically fixed on it thanks to spring clips preventing any accidental opening.

The **FLOVAC® CANISTER** when fastened to the lid by the operator, becomes a complete sealed container to be disposed after the use.

CANISTERS are available in 4 capacities and they can be supplied in different configurations: canister only, canister with 1.8 m hose, canister with 1.8 m hose and vacuum breaker.



To avoid jars getting stuck or unexpected inner scraping, **CANISTERS** are equipped with four ribs inside the bottom area stopping properly the jar position when one inside the other.

AVAILABLE CAPACITIES	0.5 L - 1.0 L - 2.0 L - 3.0 L
JAR MATERIAL	High-Clarity PP (High Clarity Polypropylene)
LID	HDPE (High Density Polyethylene)
JAR GRADUATION INTERVAL	1.0 L - 2.0 L - 3.0 L: 50 ml 0.5 L: 5 ml up to 50 ml / 10 ml up to 300 ml / 50 ml up to 500 ml suitable for critical measures
	Connection between jar and lid through pressure seal with permanent fastening spring clips
	Jar storage using concentric cone system with 4 lower blocking ribs



Spring clips to grant a permanent and safe fastening to the rigid jar by the operator.





FLCÖVNC

FLCÖVNC®



CE

www.flcövn.com



practicality

both for the operators and for hospital plants and environment, thanks to the use of absolutely reliable manufacturing materials. The different ports size avoid any connection mismatch.

flow-meter™

Via del Lino, 6 - 24040 Levate - Bergamo
ITALY

The lid

In detail

The lids are different between the **LINER** version, having the collection bag welded and integrated, and the **CANISTER** version, where the lid is a cover able to get complete sealing when firmly placed and connected onto the jar by the hospital staff.

In both **FLOVAC®** versions all connections and handling devices are concentrated on the lid. **PATIENT** and **VACUUM** ports (one male and the other female, to avoid any misconnection), the **TANDEM** port, the handle to help the bag removal after use (**LINER** version) and for easy transport, two plugs, connected to the lid through integrated plastic wirings, to close and seal the **PATIENT** port and the **TANDEM** port after use.

In case of suction with one jar only, this **TANDEM** port must be plugged before use. The male **PATIENT** port fits a removable 90° elbow with connection diameter 8.0÷9.2 mm for normal suction operations.

In case of suction with expected collected fluids containing bone fragments it is enough to remove the elbow getting access to the direct vertical connecting port having diameter 14.0÷15.5 mm. The lower part of the lid fits the special hydrophobic filter and its conical protection.



LID MATERIAL

HDPE (High Density Polyethylene)

VACUUM PORT

conic female connection

PATIENT PORT

male connection $\varnothing 14.0 \div 15.5$ mm ($\varnothing 8.0 \div 9.2$ mm with elbow connector)

TANDEM PORT

male $\varnothing 8.0 \div 9.2$ mm connection

PATIENT HOSE SIZE

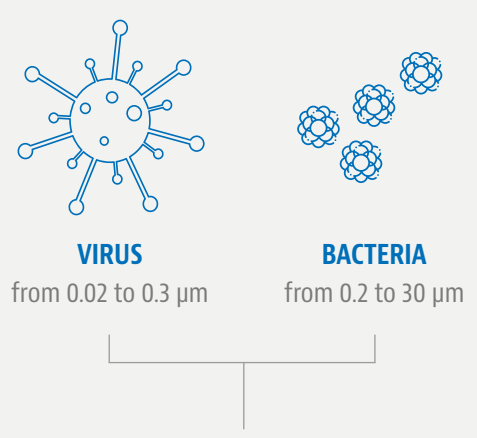
inner $\varnothing \geq 6$ mm (recommended $\varnothing 7.5 \times 11.2$ mm - L=2.5 m max)

VACUUM HOSE SIZE

inner $\varnothing \geq 6$ mm - L=1.8 m max

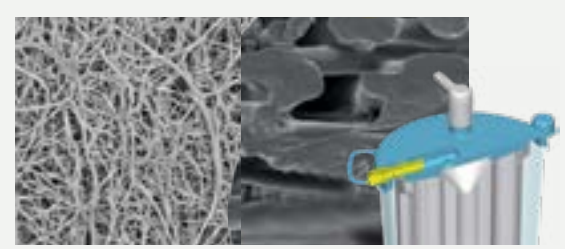


Filter efficiency



FLOVAC® FILTER

filter has a maximum porosity of 1 μm but the BFE of 99.99995% is granted by the filter special structure both on surface and on depth: irregular pores inside an irregular structure.



BACTERIAL AND VIRAL FILTRATION EFFICIENCY >99.99995%

MEMBRANE 100% expanded PTFE

PRE-FILTER microfiberglass HEPA Air Filter

TANDEM port

How to increase the capacity of suctioned fluids collection by connecting in cascade more containers

According to the fluid volume expected to be suctioned, the system gives 4 options of sizes. In case the volume is exceeding the maximum size available, it is possible to increase the capacity through the **TANDEM** port. This allows the cascade connection of two or more containers, increasing dramatically the system collection capacity.

Main accessories for TANDEM connection

TANDEM

hose connection for containers.



Vacuum "T" connection for **TANDEM** system (for wall and rail **TANDEM** applications only).



TROLLEY

Connection in cascade of two or more devices to increase the collection capacity



RAIL APPLICATION



For detailed information about Accessories page 24



FLOVAC® CANISTER
50 ml UP TO 500 ml JAR
suitable for critical measures,
connected in cascade
with two or more containers





Through **continuous product** development and a constant search for reliability to guarantee the safety of patients, caregivers and the hospital environment, **flow-meter™** has developed **complex production systems** that, starting with individual components, can now produce collecting devices of exceptional quality very competitively.

safety

In detail

FLOVAC® Hydrophobic



TANDEM PORT

The **TANDEM** port allows the connection in cascade of many containers, each one having its suction source. A plug integrated in the lid can close and seal this port in case of use of one single container.



VACUUM CONNECTOR

The vacuum source coming from the plant or from an electrical suction machine must be connected to the **VACUUM** port through a simple PC autoclavable connector fitting a suction hose, for easy, simple, fast and safe **FLOVAC®** container connection and disconnection.

SUPPORT RING

The **FLOVAC®** support ring is the same for the 2 versions, **LINER** and **CANISTER**, all the capacities and the different fitments: wall, rail, trolley. A hose hook holder integrated in the external diameter of the ring allows the suction tube to be easily fixed in to avoid obstructions. Clips are also available (optional) to fix 25x5 mm and 30x5 mm rings to trolleys, brackets and wall plates.



PATIENT PORT

The **PATIENT** port is equipped with an elbow hose connector for the suction of fluids. To allow the suction of fluids containing bones fragments, the elbow connector has to be removed.





CANISTER LID FIXING

The **FLOVAC®** container lid in the **CANISTER** version fits 5 spring clips to grant a permanent and safe fastening to the rigid jar to prevent any leakage and the accidental opening. Never try to reopen the container when lid placed and clips fastened. An eventual second closing cannot guarantee sealing and prevent accidental opening.

SUCTION KIT

The full **FLOVAC®** collection containers range is also available in option with a 1.8 m disposable suction hose, or 1.8 m hose plus disposable vacuum breaker.

VACUUM PORT

This connection to the vacuum source is conical to guarantee a perfect contact sealing, to get simple connection and removing. In addition, it is "female" to avoid any misconnection with the **PATIENT** "male" port. This possibility exists in case of new **FLOVAC®** system installations or when new health staff starts practicing with the system. The different ports connection avoids this possibility.

THE FILTER For detailed information page 20

The **FLOVAC® HYDROPHOBIC** disposable containers fit in the lid a hydrophobic filter acting as an overflow valve and giving full antibacterial, anti-foaming and electrosurgical smoke protection.

Safety

Why hydrophobic filter and how does it work?

The **FLOVAC® HYDROPHOBIC** filter is made of 3 layers having antibacterial, smoke filtration and hydrophobic functions.

The filter stops the suction when wet because the fluid reaches the maximum collection level. In normal suction conditions the filter works with the maximum of efficiency, granting a bacterial protection towards the hospital vacuum plant or other suction sources. It becomes like an impenetrable barrier, when wet, stopping the suction also when foams or surgical smokes have been suctioned, getting in contact with the filter.

Key points



Protection

- hydrophobic properties to stop the suction when the fluid reaches the container maximum level (overflow system).
- bacterial and viral toward the hospital vacuum plant to prevent any contamination.
- **bacterial and viral filtration efficiency >99.99995%.**



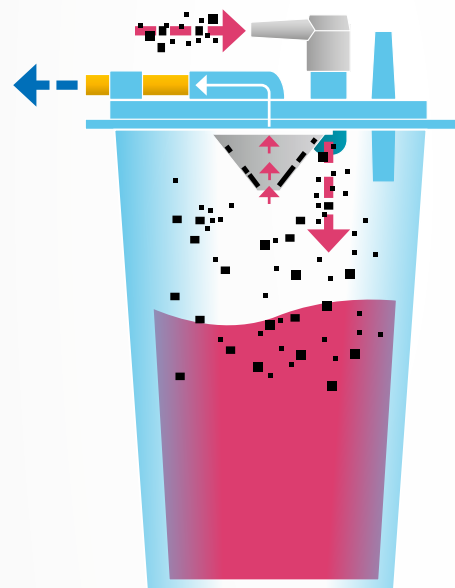
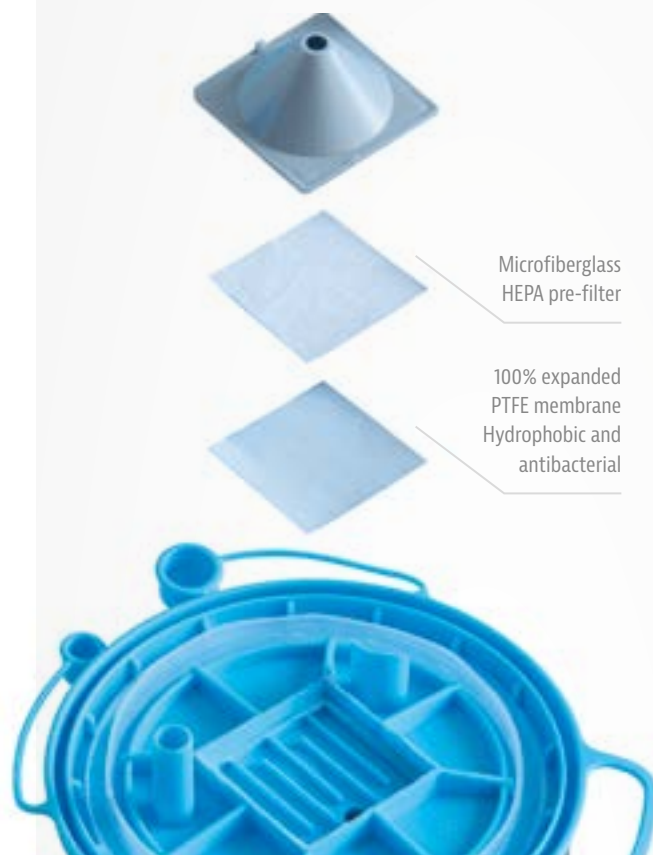
Barrier

against foam or electrosurgical smoke, normally not stopped by traditional overflow devices.



The pre-filter

reduces the effect of the premature shut-off caused by the electrosurgical smokes, foams, nebulization and volatile particles obstructing the filter itself.



A special hydrophobic filter stops the suction when the fluid reaches the maximum collection level, assuring in the meantime a complete hospital vacuum plant bacterial protection during the normal suction. This filter is the best answer to grant hygiene and safety for patients and operators in the medical suction field.

Gelling kit

The gelling kit gives further safety to an highly efficient system. It is a special absorbing powder transforming liquids in a semi-solid mass.

This grants higher safety for operators charged to clean, handle and transport potentially infected materials. This process allows to absorb and incorporate all liquids suctioned in the **FLOVAC®** containers and to prevent dangerous contamination risks for the health staff in case of biological fluids accidental leakage. The correct necessary quantity of gelling powder is supplied in small water-soluble pouches, already inserted into the container bag in **LINER** version, or supplied in 50 pieces boxes for use in **CANISTER** version. In this case one single gelling bag needs to be placed into the container before fastening the lid.

The gelling powder is also available in 500 g. bottles with funnel/doser so that to be poured into the **FLOVAC®** containers by the operators after the use and before disposal.

LINER
supplied in small pouches already inserted into the container bag (on request)



CANISTER
pouches to be inserted into canisters before use (on request)



Gelling powder gel in 500 g. bottles with funnel/doser to be used for both **LINER** and **CANISTER** versions

Gelling powder bag for **CANISTER FLOVAC®** only



Gellified suctioned liquid

Soft and resistant bag made in LDPE (Low Density Polyethylene) with specific surface finishing reducing its adhesion to the jar walls once the liner is full and allowing an easier extraction. It is tested to resist to accidental fall and to the heaviest conditions

Jar made of Polycarbonate:
- Easy cleaning
- Graduated scale for easy reading of the volume of the suctioned fluids



simplicity

The **FLOVAC**[®] container production departments are equipped with industrial automation systems integrating new processing technology to improve working conditions, create new business models, increase productivity and improve production quality.



VAC

CE

FLOW

2

flow

Via del L...

Accessories

for FLOVAC® disposable containers



Reusable support jars (for LINER version) in polycarbonate, autoclavable (121 °C - 15 min.)

15 pieces/package
1.0 L

12 pieces/package
1.5 L

10 pieces/package
2.0 L

5 pieces/package
3.0 L

Available also in blue version 1.0 L and 2.0 L only.



Support ring for FLOVAC® container

- with **25x5 mm** hook (standard)
- with **30x5 mm** hook
- with **41x4 mm** hook
- with **45x5 mm** hook



ON-OFF tap

with or without control vacuum gauge, for fitting FLOVAC® container support ring



Wall bracket

- **25x5 mm** slide wall plate (standard)
- **30x5 mm** slide wall plate
- **45x5 mm** slide wall plate



Bracket for 30x10 mm and 50x10 mm rail

in technopolymer available in **25x5 mm** slide, **30x5 mm** slide or **45x5 mm** slide



Clip fixing

25x5 mm and 30x5 mm rings to trolleys, brackets and wall plates

50 pieces/package



Polycarbonate connector

reusable polycarbonate connector to supply the **VACUUM** port

 25 pieces/package



Hose with connector

hose \varnothing 7.5x11.2 mm - L=0.37 m with connector to supply the **VACUUM** port

 50 pieces/package



Polycarbonate elbow connector

reusable polycarbonate elbow connector to supply the **VACUUM** port

 25 pieces/package



Hose with elbow connector

hose \varnothing 7.5x11.2 mm - L=0.37 m with elbow connector to supply the **VACUUM** port

 45 pieces/package



Specimen container

in 500 g. bottles with funnel/doser

 10 pieces/package



Gelling powder gel

in 500 g. bottles with funnel/doser

 10 pieces/package



Disposable VACUUM breaker

hose \varnothing 7.5x11.2 mm - L=1.8 m with disposable **VACUUM** breaker

 50 pieces/package



Hose with VACUUM breaker

hose \varnothing 7.5x11.2 mm - L=1.8 m with disposable **VACUUM** breaker

 100 pieces/package



Gelling powder bag

special gelling powder bag for all sizes of **CANISTER FLOVAC®**

 50 pieces/package



Vacuum "T" connection

for **TANDEM** system (for wall and rail **TANDEM** applications only)

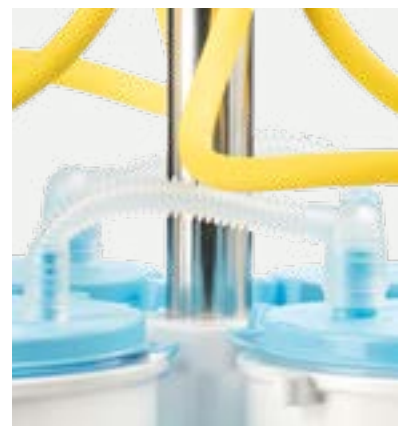
 100 pieces/package



TANDEM connection system

in 500 g. bottles with funnel/doser

 100 pieces/package



Trolleys

4-places trolley for FLOVAC® container with handle and:

- 4 support rings
- 4 ON-OFF taps
- control vacuum gauge



Braking castor

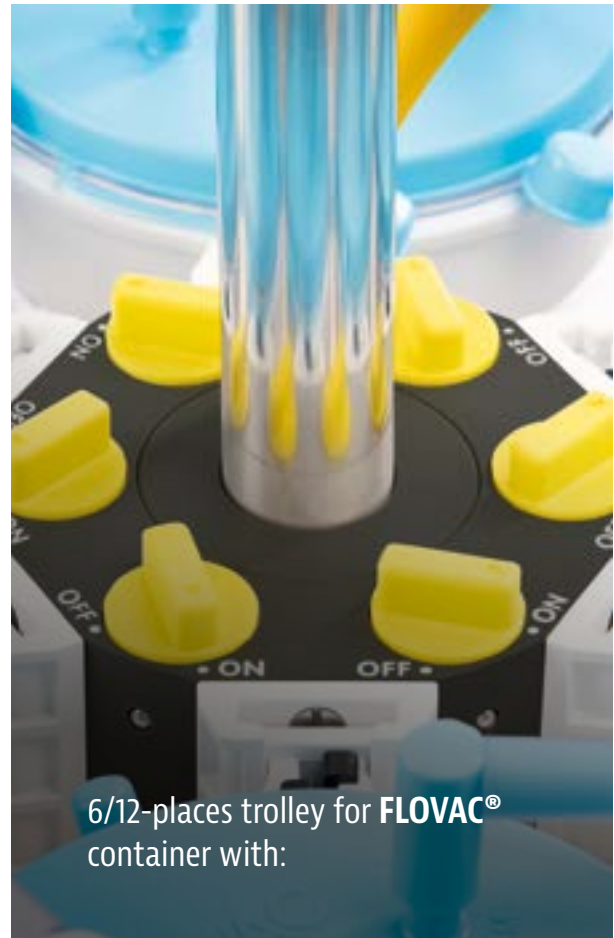
- 4 support rings



- 4 support rings
- 4 ON-OFF taps



- 4 support rings
- 4 ON-OFF taps
- vacuum regulator **EASYVAC®** or **EasyVAC® PLUS**



6/12-places trolley for **FLOVAC®** container with:

- 4 support rings
- 4 ON-OFF taps
- side fitting vacuum regulator **EASYVAC®** with safety jar **EASYSAFE®**.



- 6/12 support rings
- 6/12 ON-OFF taps
- side fitting vacuum regulator **EASYVAC®** with safety jar **EASYSAFE®**



Product codes











FLOVAC® disposable containers

		DESCRIPTION	CODE	PCS. PER BOX
FLOVAC® "LINER" VERSION SINGLE-USE SOFT LINER BAG IN A REUSABLE SUPPORT CONTAINER				
	LINER FLOVAC® Hydrophobic	1.0 L	000036010	50
		1.5 L	000036014	50
		2.0 L	000036011	50
		3.0 L	000036012	50
	LINER FLOVAC® Hydrophobic	1.0 L with gelling powder bag included	000036015	50
		2.0 L with gelling powder bag included	000036016	50
		3.0 L with gelling powder bag included	000036017	50
	LINER FLOVAC® Hydrophobic	1.0 L with 1.8 m hose	000036030	40
		2.0 L with 1.8 m hose	000036031	40
		3.0 L with 1.8 m hose	000036032	40
	LINER FLOVAC® Hydrophobic	1.0 L with 1.8 m hose and vacuum breaker	000036050	40
		2.0 L with 1.8 m hose and vacuum breaker	000036051	40
		3.0 L with 1.8 m hose and vacuum breaker	000036052	40
	Reusable FLOVAC® support container	1.0 L	970010211	15
		1.5 L	970010327	12
		2.0 L	970010212	10
		3.0 L	970010213	5
	Blue reusable FLOVAC® support container	1.0 L	970010289	15
		2.0 L	970010290	10




FLOVAC® disposable containers and accessories

		DESCRIPTION	CODE	PCS. PER BOX
FLOVAC® "CANISTER" VERSION SINGLE-USE RIGID COLLECTION JAR WITH LID				
	CANISTER FLOVAC® Hydrophobic	0.5 L specific for critical measures	000036106	60
		1.0 L	000036000	60
		2.0 L	000036001	50
		3.0 L	000036002	30
	CANISTER FLOVAC® Hydrophobic	1.0 L with 1.8 m hose	000036020	45
		2.0 L with 1.8 m hose	000036021	40
		3.0 L with 1.8 m hose	000036022	25
	CANISTER FLOVAC® Hydrophobic	1.0 L with 1.8 m hose and vacuum breaker	000036040	45
		2.0 L with 1.8 m hose and vacuum breaker	000036041	40
		3.0 L with 1.8 m hose and vacuum breaker	000036042	25
FLOVAC® LINE ACCESSORIES				
	Support ring for FLOVAC® container	with 25x5 mm slide (standard)	970010210	-
		with special slides 45x5 mm	970010215	-
		with special slides 41x4 mm	970010214	-
		with special slides 30x5 mm	970010220	-
	ON-OFF tap	for fitting on FLOVAC® container support ring	000010057	-
	ON-OFF tap	with control vacuum gauge, for fitting on FLOVAC® container support ring	000010056	-
	ABS wall plate with fitments	slide 25x5 mm	920200004	-
		slide 30x5 mm	920200029	-
		slide 45x5 mm	920200477	-
	ABS rail clamping bracket for 25÷35x10 mm rail	with slide 25x5 mm	000230500	-
		with slide 30x5 mm	000230510	-
		with slide 45x5 mm	000230515	-

FLOVAC® accessories

		DESCRIPTION	CODE	PCS. PER BOX
FLOVAC® LINE ACCESSORIES				
	Clip	fixing 25x5 mm and 30x5 mm rings to trolleys, brackets and wall plates	000036107	50
	TANDEM connection system		000036103	100
	Vacuum "T" connector for wall and rail TANDEM applications		930070304	100
	Reusable FLOVAC® suction system connector	polycarbonate	000036102	25
	Reusable FLOVAC® suction system connector	with hose diam 7.5x11.2 mm, length = 0.37 m	000036101	50
	Reusable FLOVAC® suction system elbow connector	polycarbonate	000036105	25
	Reusable FLOVAC® suction system elbow connector	with hose diam 7.5x11.2 mm, length = 0.37 m	000036104	45
	Specimen container		000036100	10
	Gelling powder in 500 g. bottles	with funnel/doser	000036149	10
	Disposable vacuum breaker		000320000	50

FLOVAC® accessories and trolleys

	DESCRIPTION	CODE	PCS. PER BOX
FLOVAC® LINE ACCESSORIES AND TROLLEYS			
	Disposable vacuum breaker with 1.8 m hose	000320010	100
	Gelling powder bag for CANISTER FLOVAC® any size	000036150	50
	4 support rings, basic version	000260953	-
	with 4 ON-OFF taps and 4 support rings	000260945	-
	with ON-OFF taps and vacuum gauge, 4 support rings	000260950	-
	Trolley for FLOVAC® system		
	with ON-OFF taps and EASYVAC® vacuum regulator, 4 support rings	000260955	-
	with ON-OFF taps and EasyVAC® PLUS vacuum regulator, 4 support rings	000260944	-
	with ON-OFF taps and side mounting EASYVAC® vacuum regulator and EASYSAFE® safety jar, 4 support rings	000260957	-
	with 6 ON-OFF taps and side mounting EASYVAC® vacuum regulator and EASYSAFE® safety jar, 6 support rings	000260947	-
	with 12 ON-OFF taps and side mounting EASYVAC® vacuum regulator and EASYSAFE® safety jar, 12 support rings	000260946	-

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