

# INTEGRA



**VACUSAFE** The aspiration system for safe disposal of liquids

# VACUSAFE



Vacuum systems are widely used for aspiration of liquids and their subsequent disposal. Common applications include the removal of media from cell cultures, of supernatants after centrifugation and of wash solutions from immuno-assay well-plates.

Protecting the vacuum source from contamination by liquids and aerosols with an overflow trap and a filter is not only good laboratory practice, but also imperative as a personal protection measure when working with biological, chemical or radioactive liquids.

As an alternative to “do-it-yourself” systems typically found in laboratories, the VACUSAFE aspiration system offers increased safety, exceptional user-friendliness and high versatility.

The VACUSAFE is available either as a stand-alone system with integrated vacuum pump or as an instrument that can be connected to existing vacuum sources like a house vacuum pipeline or an external pump.

## Safety first: protection for yourself and the lab

The VACUSAFE product range offers different levels of safety depending on the requirements of specific applications. Basic safety characteristics that apply to all models include the:

- hydrophobic filter for vacuum source protection,
- shatterproof bottle for prevention of spills,
- stand for securely holding the bottle in place,
- autoclavability of the system components that contact liquid.

For total containment of hazardous liquids, the best choice is one of the closed systems with additional safety features:

- Integrated pump with vacuum control (no risk of contaminating house vacuum pipelines and reduced environmental impact by evaporation of volatile solvents).
- Self-closing connectors for avoiding escape of drops or aerosols from disconnected bottle and tubing.
- Level sensor detecting when the bottle is full and so preventing liquid overflow.



## User-friendly system for productive aspiration

A simple routine task like the aspiration of liquids requires user-friendly equipment that is easy to install and convenient to operate. Only so it is possible for the user to fully concentrate on relevant and complex work. Several aspects make the VACUSAFE a convenient tool for productive aspiration:

- All-in-one system includes all necessary components. Consumables and spare parts are always available from the same source.
- Straightforward operation – simply switch on, set the desired vacuum and start working.
- The integrated pump or valve is switched off automatically when the vacuum is established in the bottle and is switched on again when the vacuum is used – this way unnecessary noise is avoided and the pump's lifetime increased.
- The noise of the integrated pump is well below 65 dB(A), the level recommended by the European agency for health and safety at work.
- The quick tubing connectors speed up bottle removal and also make this operation safer.
- Carrying and emptying the bottle is much easier and safer with the specially designed handle.



## Versatile tools for all liquid aspiration tasks

An important component contributing to the versatility of the VACUSAFE system is the vacuum aspiration tool VACUBOY because it can be fitted with different adapters for removal of liquids from virtually every laboratory vessel. The application range is further expanded by the possibility to adjust the vacuum level depending on the needs: from gentle removal of supernatants from an Eppendorf tube or 96-well plate to fast emptying of a large culture flask.

The system's versatility is increased by the option to connect two VACUBOY aspirators to the same VACUSAFE, which is particularly important for busy laboratories where often two persons work simultaneously in the same biosafety cabinet.



## VACUSAFE product range

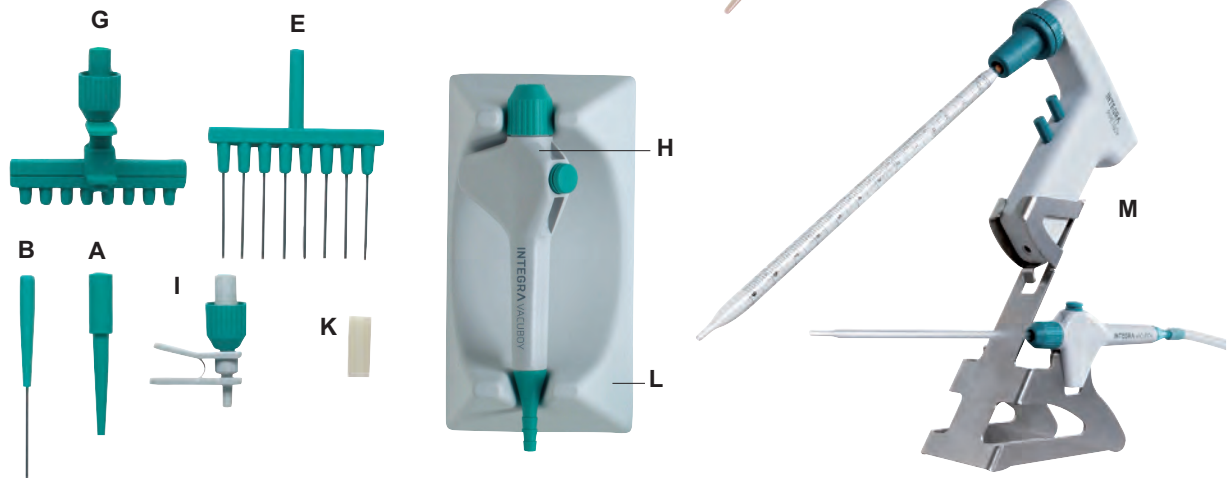
	Systems for connection to external vacuum source		Closed aspiration systems with integrated vacuum pump		
	158 620	158 610	158 320	158 310	158300
Features common to all models: <ul style="list-style-type: none"> <li>● Shatterproof polypropylene bottle and handle (autoclavable).</li> <li>● Filter for protection against overflow of liquid and escape of aerosols.</li> <li>● Autoclavable VACUBOY aspiration tool with different adapters and tubing.</li> </ul>					
● Vacuum control (by pump or valve): noise reduction and increased pump's lifetime, minimised evaporation of volatile solvents.		●	●	●	●
● Electronic level detection: prevention of liquid overflow.		●		●	●
● Quick couplings made of POM: easy unplugging of bottle, self-sealing of bottle couplings.		●			
● Autoclavable quick couplings made of PVDF: lid is autoclavable, bottle and tubing couplings are self-sealing for full containment of biohazardous liquids.				●	●
● Glass bottle for fast autoclaving (20' @ 121°C): coated glass to avoid shattering.					●

## Technical data

	158 620	158 610	158 320	158 310	158300
Vacuum range	n/a (depends on specifications of external vacuum source)		-300 to -600 mbar (adjustable)		
Pump flow rate			8 L/min (air)		
Aspiration rate of liquids			15 ml/s		
Noise emission			< 50 dB(A) at 1 m		
Dimensions (HxWxD)	42x21x21 cm	53x18x32 cm			
Weight	2.0 kg	2.7 kg	3.4 kg		
Mains adapter input	n/a	100 – 240 VAC, 50/60 Hz			

# VACUBOY

Successful removal of supernatants from lab containers by means of a vacuum aspiration system depends on applying the correct level of vacuum and on using an aspirator tip that matches the size and form of the container from which liquid is aspirated. The vacuum aspiration tool VACUBOY has been designed specifically to match the diversity of laboratory containers. Different adapters fit on the hand operator so that your vacuum source is converted into a flexible system for aspirating liquids from tubes, dishes, bottles, T-Flasks, 24-well and 96-well plates.



## Ordering information

Instrument		Part No.
<b>VACUBOY hand operator</b> (included with the VACUSAFE)	for vacuum-based aspiration of liquids, complete with: <ul style="list-style-type: none"> <li>● hand piece (for holding adapters or pipettes) H</li> <li>● rubber adapter for Pasteur pipettes K</li> <li>● 1-channel stainless steel adapter 40 mm B</li> <li>● 1-channel adapter for disposable tips with ejector I</li> </ul>	155 510
<b>VACUBOY hand operator set</b>	with additional parts L, E, A, G (see picture and accessories) and silicone tubing (length 180 cm)	155 500

Accessories		Part No.
Adapter	1-channel, length 40 mm, stainless steel tip	B 155 502
	4-channel, length 40 mm, stainless steel tips	155 524
	8-channel, length 40 mm, stainless steel tips	E 155 503
	1-channel, length 150 mm, stainless steel tip	155 522
	1-channel, length 280 mm, stainless steel tip	155 525
	1-channel, for disposable tips	A 155 504
	1-channel, for disposable tips, with ejector	I 155 526
	8-channel, for disposable tips, with ejector	G 155 520
	for Pasteur pipettes made of rubber	K 155 505
Stand for hand operator	for parking VACUBOY hand operator	L 155 501
Stand	for PIPETBOY (acu or comfort) and VACUBOY	M 155 065

# Ordering information

Instrument		Part No.
<b>VACUSAFE</b>	Aspiration system complete with collection bottle, bottle handle, tubing, filter, and VACUBOY hand operator (155 510).	
	With integrated vacuum pump	158 300
	● 3 litre bottle (glass)	
	● Level detection and lid with quick tubing couplings (PVDF)	
	With integrated vacuum pump	158 310
	● 4 litre bottle (polypropylene)	
● Level detection and lid with quick tubing couplings (PVDF)		
With integrated vacuum pump	158 320	
● 4 litre bottle (polypropylene)		
● Lid with barbed tubing fittings		
For external vacuum source	158 610	
● 4 litre bottle (polypropylene)		
● Level detection and lid with quick tubing couplings (POM)		
For external vacuum source	158 620	
● 4 litre bottle (polypropylene)		
● Lid with barbed tubing fittings		
<b>Accessories</b>		<b>Part No.</b>
Bottle	4 litres, polypropylene	158 370
	3 litres, glass	158 420
Lid	for 4L bottle, with quick couplings (PVDF) + level detection	158 401
	for 4L bottle, with quick couplings (POM) + level detection	158 402
	for 4L bottle, with barbed tubing fittings	158 372
	for 3L bottle, with quick couplings (PVDF) + level detection	158 418
Bottle and lid	comprises part no. 158 370 and 158 401	158 431
	comprises part no. 158 370 and 158 402	158 433
	comprises part no. 158 370 and 158 372	158 432
	comprises part no. 158 420 and 158 418	158 430
Level sensor cable		158 403
Bottle handle	for carrying polypropylene bottle, removable	158 625
Bottle stand	for polypropylene bottle	158 630
Stand	for PIPETBOY and VACUBOY	155 065
Mains adapter	100-240 VAC, 50/60 Hz	158 395
Air outlet connector	for connection of tubing to the air outlet of the pump (w/o tubing)	158 427
Y-connector	for connection of second VACUBOY hand operator	158 354
VACUBOY	See VACUBOY ordering information	
<b>Consumables</b>		<b>Part No.</b>
Tubing	for connection of hand operator to bottle, 180 cm, silicone	158 332
	for connection of instrument to bottle, 70 cm, silicone	158 331
Filter	for protection of vacuum source, 0.45 µm, hydrophobic	158 015
Tubing set with filter	comprises part no. 158 331, 158 332, 158 015	158 342



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