The Genevac Rocket™ Sample Holders

User Manual

Original instructions

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Contents

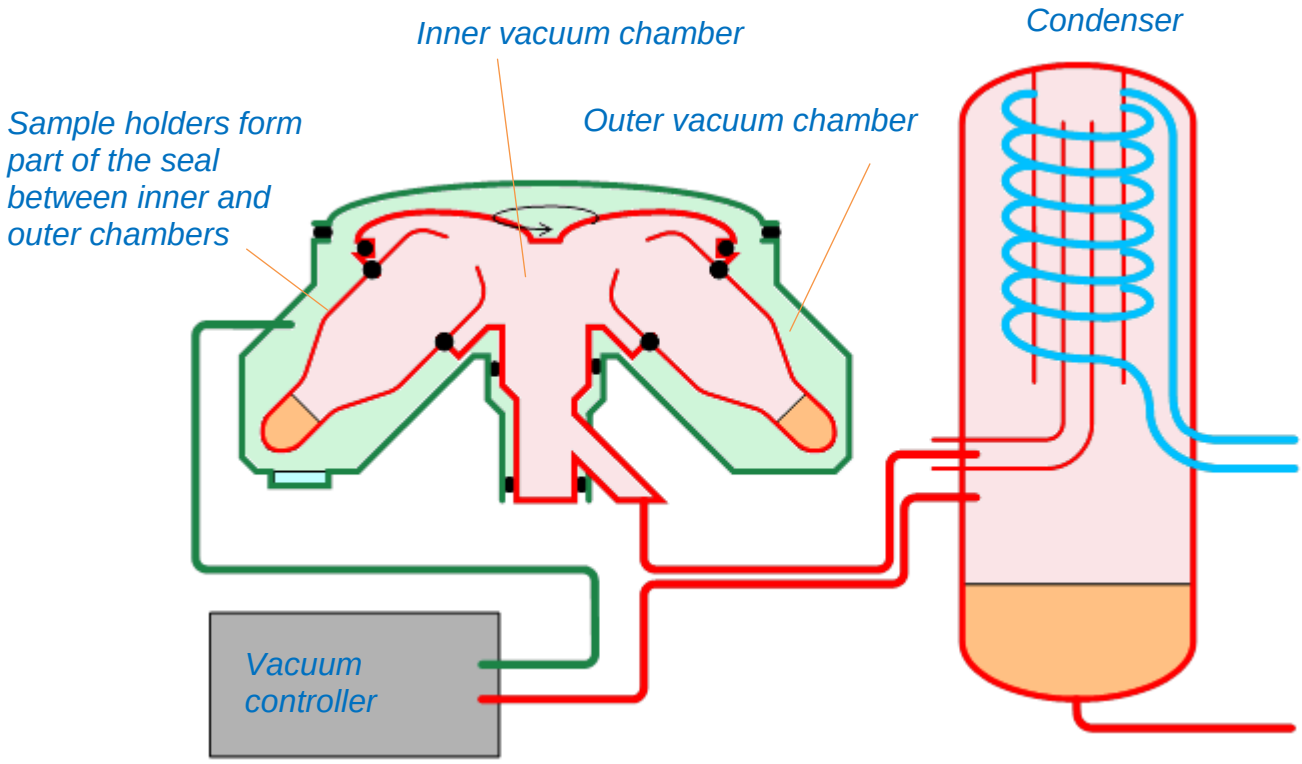
Introduction

The sample holders described in this user manual are for use with the Genevac Rocket™ evaporator.

With the selection of the appropriate sample holder, the Rocket evaporation system can be can be set up to dry samples completely or to concentrate samples to a small volume.

* ***ASE*** is a registered trade mark of Dionex Corporation.

The sample holders form part of the unique twin vacuum chamber system of the Rocket evaporator, it is therefore necessary, for the reliable operation of the evaporator, that the sample holders are maintained in good condition and are used correctly.



Rocket evaporator vacuum system

The sample holders must be clean and free of imperfections around the area of the sealing surfaces. Any imperfections (such as chips, scratches or labels applied to the flasks) are likely to cause leaks which will slow down the evaporation process.

The advice and instructions contained within this manual will assist in the day to day use and maintenance of the Rocket sample holders.

Safety

Warnings and cautions

This symbol is used within this manual to highlight ***Warnings*** and ***Cautions***.

Warning: highlights a risk of material damage or personal injury

Caution: highlights a risk of material damage.

Precautions

The following safety precautions should be observed when using Rocket sample holders:

- Do not load scratched or damaged glassware in the evaporator
- Place flasks in a flask holder to fill with samples
- Do not fill flasks above the maximum fill level indicated on the side of flasks
- Remove sample holders from the evaporator with care; they are likely to be warm and wet after the evaporator has been running.

Caution: Incorrect loading may result in damage to samples and to the Rocket evaporator.

This user manual should be referred to in conjunction with the Genevac Rocket™ Evaporation System User manual. Only allow users who are familiar with all the issues outlined in this, and the Rocket user manual to use the Rocket sample holders. If personnel lack the training or experience to comprehend the hazards that can arise when using the equipment, do not allow them to use it; personnel without such training require thorough instruction and the information contained within this user manual may form the basis of such training.

Limitations of use

This manual describes the range of sample holders that are designed for use in the currently manufactured range of Rocket evaporation systems that do not have ***flask-adapters*** fitted to the rotor.

Older types of sample holder (shown on a following page) must only be used in Rocket evaporators that have flask-adapters fitted to the rotor.

Sample holder range

The following sample holders are described in this user manual and are for use in Rocket evaporators that do not have flask-adapters fitted to the rotor:

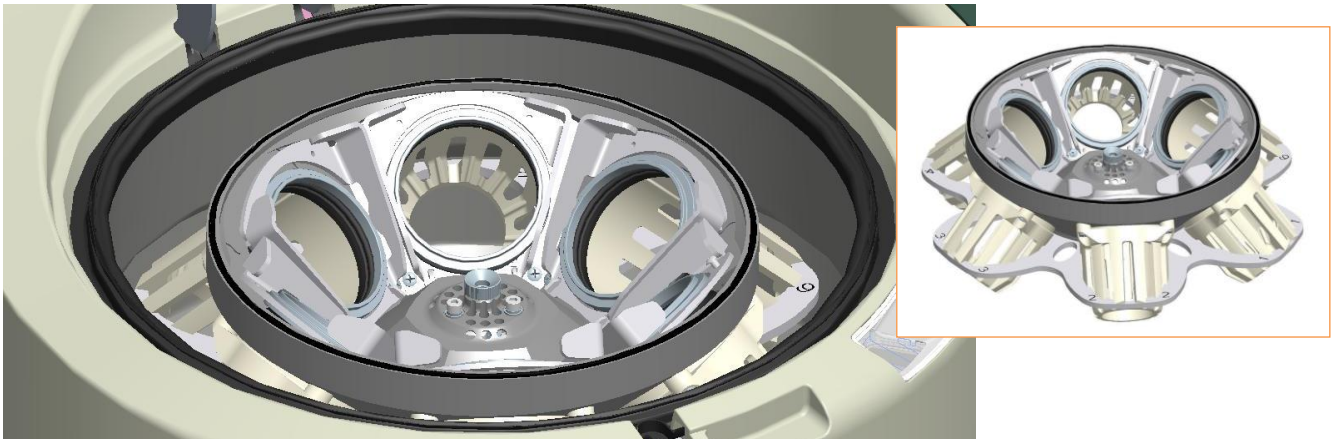
Standard flask with collar and pad

GC vial system[2]

Sample Genie[3]

ASE tube puck

If your Rocket rotor looks like this:



…it does not have flask-adapters and it is safe for use with the sample holders shown above:

Early Rocket evaporators (up to serial number RK0133) were supplied with flask-adapters fitted to the rotor. If your Rocket rotor looks like this:

…it has flask-adapters fitted and is not compatible with the current range of sample holders, only older sample holders are safe to use.

Older sample holders

The following sample holders are compatible only with Rocket evaporators that have flask adapters fitted to the rotor:

Standard flask without collar and pad

GC vial system[1]

SampleGenie[1]

Note: Sample holder components are not interchangeable between different sample holder types or versions. Do not attempt to exchange parts, e.g. do not attempt to fit a SampleGenie[2] collar onto a SampleGenie[3].

Flask-adapters - removal

In order to accommodate the current range of Rocket sample holders in earlier evaporators (up to serial number RK0133) the flask-adapters may be removed from the rotor. This is a simple operation which can be carried out quickly and easily. For instructions, refer to the ***Rocket User Manual***.

To avoid the risk of inadvertent use of non-compatible sample holders, Genevac recommend that all Rocket evaporators in a common location, should have the same rotor configuration with flask adapters removed and any early type sample holders should be upgraded to the later type. Upgrades for sample holders are available at a discounted rate.

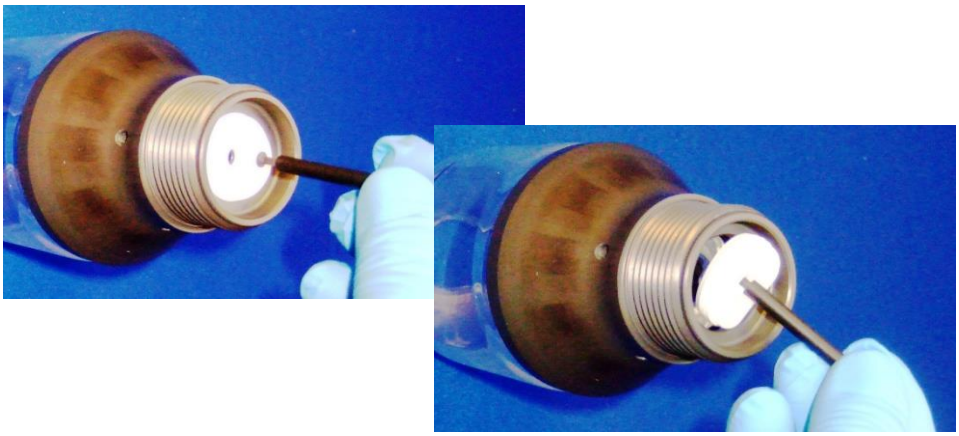
Evaporators with serial numbers RK0133 onwards were supplied without flask-adapters fitted to the rotor.

Caution: Risk of sample holder breakage. If incompatible sample holders are loaded into a rotor, they may break causing unrecoverable loss of samples and may cause damage to the Rocket evaporator.

Accessories

Seal removal tool

A ***seal removal tool*** (Genevac part number: 04-8321) is supplied with SampleGenie[3]. The tool can be used to remove the seal assembly from the SampleGenie flask without risk of damage to flask or seals.



Caution: Sharp, metallic tools can scratch the sealing face of the flask, causing leaks that may result in unrecoverable sample loss. Use the seal removal tool to prize the vial seal from the flask.

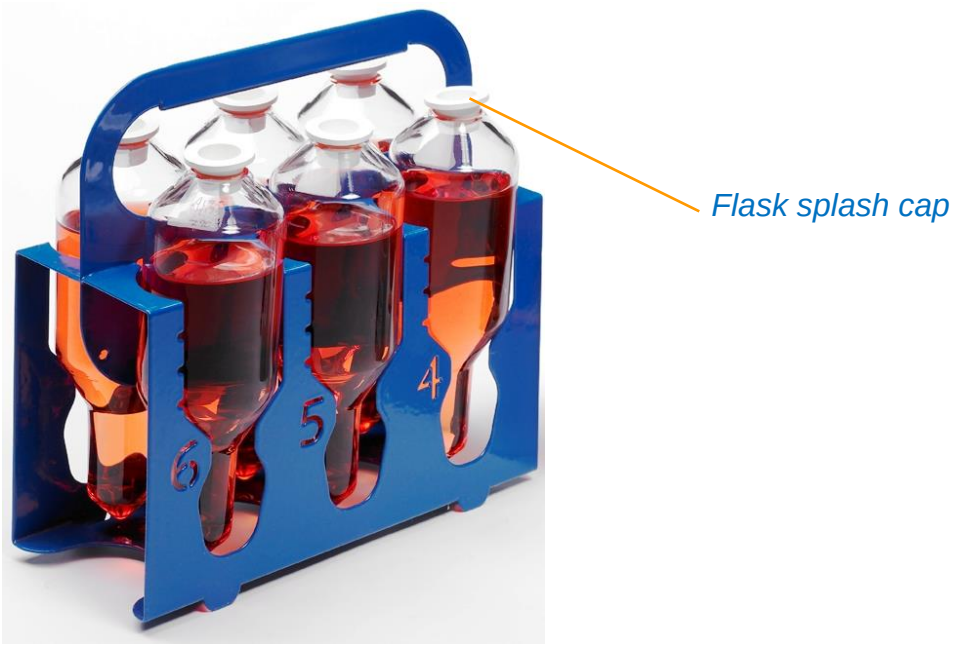
Flask rack

The use of a ***flask rack*** (Genevac part number: 70:1187) allows safe and easy transportation of flasks.

Flasks may also be placed in the flask rack to fill with samples.

Flask splash cap

Flasks should be sealed using ***flask splash caps*** (Genevac part number for set of six: 70-1265) before carrying in the rack.



Flask rack

Single flask holder

A single ***flask holder*** (Genevac part number: 04-6381) is available for use as a balance nest.

Single flask holder

Standard Flask

Standard flasks are ideal for general sample drying; dried product may be scrapped from the side of the flask or re-suspended after evaporation. The standard flask with collar and pad, as shown, is for use in rotors without flask-adapters.

Spare parts

Item	Description	Part number	Quantity in set
	Complete assembly (excluding flask splash caps)	70-1321	6
1	Flask splash cap	70-1265	6
2	Standard flask	70-1170	6
3	Collar pad	70-1317	6
4	Collar	70-1319	6

Instructions

1. Insert the ***collar pad*** into the ***collar*** and press to snap them together (after assembling for the first time, these parts may remain assembled or can be separated for cleaning).

2. Fit the collar and pad assembly over the “nose” of the flask.

3. Fill flasks with samples (balance within 10 g) and Insert the complete flask assemblies into the Rocket rotor in a balanced configuration.

Note: To use Standard flasks in Rocket evaporators that have flask adapters fitted to the rotor; remove the collar and pad from the flask and insert the flask directly into the rotor.

Note: If rotor has flask-adapters, no not fit collar and collar pads to flasks. If rotor does not have flask adapters, flask collars and pads must be fitted to flasks.

GC Vial System^2

Using ***GC vial system***^{2} samples can be concentrated directly into GC vials. Samples are insulated within the vial, so remain liquid even if parallel samples take a little longer to reach concentration. The evaporator can be set up to stop automatically with a small volume of solvent remaining in each vial.

Note: ***GC vial system***^{2} is for use in Rocket evaporators that do not have flask adapters fitted to the rotor. See: ***Limitations of use***.

Spare parts

Item	Description	Part number	Quantity in set
	Complete assembly with white viton seals (excluding flask splash caps)	70-1423	6
	Complete assembly with perfluoroelastomer seals (excluding flask splash caps)	70-1424	6
1	Flask splash cap	70-1265	6
2	GC vial flask[2]	70-1425	6
3	Vial seal - white Viton	70-1359	▪
	Vial seal - perfluoroelastomer	70-1360	▪
4	GC vial adapter[2] with O-ring	70-1428	6
5	O-ring for GC vial adapter[2]	70-1429	6
6	Collar pad	70-1317	6
7	GC collar[2]	70-1320	6

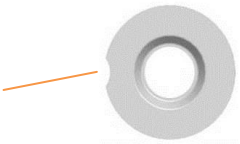
▪ Specify quantity when ordering

Note: Adapters that have black O-rings and ridges on the base, are not compatible with the parts listed above. These adapters must be upgraded using the part numbers above, when new O-rings are required.

Vial seals

Seals for ***GC vial system*** [2] are available in low leachable white viton or highly resistant perfluoroelasteomer (perfluoroelastomer seals have a small notch for identification purposes).

White viton seal



Notch

Perfluoroelastomer seal

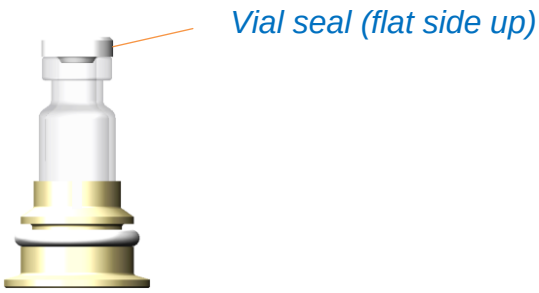
Note: Always check to make sure the sample holder seals are compatible for use with the solvent being evaporated. See: ***Acceptable solvents***.

Instructions

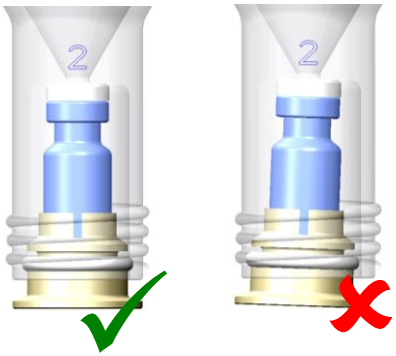
1. Insert the ***collar pad*** into the ***GC collar*** and press to snap them together (after assembling for the first time, these parts can remain assembled or can be separated for cleaning).

2. Place a GC vial in the ***GC vial adapter***.

3. Place a vial seal on top of the vial with the sealing lip facing the vial and the flat side facing upwards.



4. Insert the GC vial and ***GC vial adapter*** into the neck of the ***GC flask***. Make sure the vial locates squarely against the vial seal.



5. Hold the vial and flask vertically (so the vial remains squarely pressed against the vial seal) and screw the ***GC collar*** onto the ***flask***.

6. Repeat for the remaining flask assemblies and fill the flasks with samples. Balance the flasks to within 10 g.

7. Insert the flask assemblies into the Rocket rotor.

Note: The vial seal adapter should be removed from the flask when the sample holder is not in use.

SampleGenie[3]

Using ***SampleGenie[3]*** samples can be dried directly into vials.

Note: ***SampleGenie[3]*** is for use in Rocket evaporators that do not have flask adapters fitted to the rotor. See: ***Limitations of use***.

Spare parts

Item	Description	Part number	Quantity in set
	Complete assembly (excluding splash caps and adapters)	70-1660	6
1	Flask splash cap	70-1265	6
2	SampleGenie^3 flask	70-1662	6
3	SampleGenie^3 collar pad	70-1667	6
4	SampleGenie^3 collar	70-1666	6
5	SampleGenie^3 vial seal assembly	70-1663	6
6	SampleGenie^3 vial seal - silicon split-insert only	70-1664	6
7	SampleGenie^3 vial seal - PTFE holder only	70-1665	6
8	SampleGenie^3 vial adapter	▪	6
9	SampleGenie^3 vial adapter pad (for vial ø > 25 mm)	70-1661	6
10	Seal removal tool	04-8321	1

▪ Please supply a sample of your vials, Genevac will supply vial adapters to match (size limits apply)

Note: The SampleGenie^3 flask includes non-wetted elastomer seals which are designed to tolerate the steam environment of the outer chamber only; they should not be exposed to solvents. Any solvent drips or spills must be cleaned up immediately, see: ***Cleaning and Maintenance***.

Vial seal assembly

The vial seal assembly consists of two parts: a ***silicon split-insert*** and a ***PTFE holder***. Fit the slit insert into the PTFE holder as shown.

Assemble insert and holder to form vial seal

Use the seal removal tool (supplied) to remove the vial seal assembly from the flask.

Vial seal assembly parts should be replaced at the first signs of wear or damage.

SampleGenie^2 users should note there is no longer a requirement to order perfluoroelastomer seals for use with certain solvents.

Vial adapters

A range of ***vial adapters*** is available to suit vial sizes from 15 to 28 mm in diameter, and 35 to 70 mm in length.

A code on the base of the vial adapter, indicates its compatibility; only use the vial adapter with the SampleGenie set and vial type for which it was specified. For further information, contact your local Genevac representative.

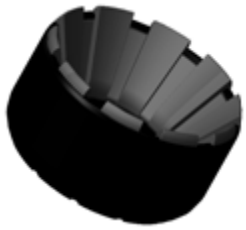
Vial adapter pad

Vial adapters for vials of 25 mm diameter and larger (including 20 ml scintillation vials) have a ***vial adapter pad*** which fits into the base of the vial adapter well; this cushions the vial, reducing the stress caused by centrifugal load. Take care to ensure the vial adapter pad is not lost or separated from the vial adapter when handling or cleaning the assemblies. Check the condition of the pad before every use and replace at the first sign of wear. A blunt, non-metallic tool can be used to remove the vial adapter pad from the vial adapter.

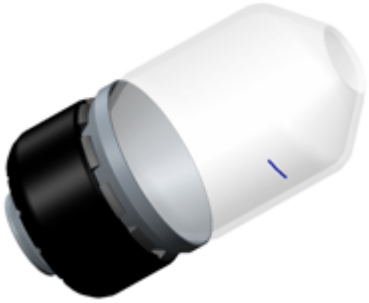
Note: Vial adapter pads must be used with larger vials (25 mm diameter or larger).

Instructions

1. SaInsert the ***collar pad*** into the ***collar*** and press to snap them together (after assembling for the first time, these parts can remain assembled or can be separated for cleaning).



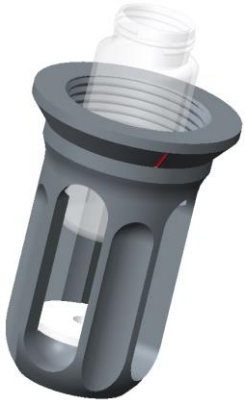
2. Fit the collar and pad assembly onto the base of the ***flask***, push and twist to ensure the collar pad fits squarely against the base of the flask.



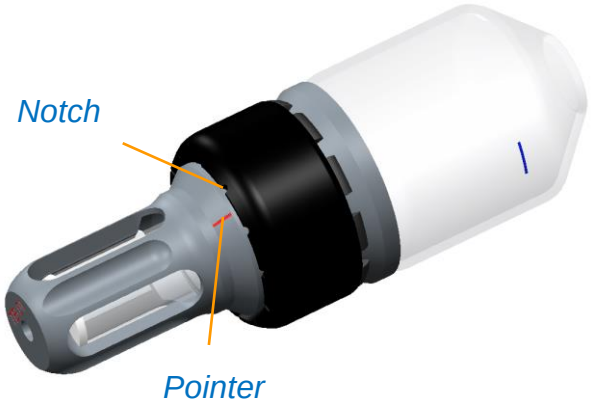
3. Insert the ***SampleGenie3 vial seal assembly*** into the neck of the flask and push until it locates against the shoulder of the flask.

Note: Alternating the orientation of the seal with each use, will help prevent it becoming deformed.

4. Place the vial in the vial adapter. For vials of 25 mm diameter or more, make sure a vial adapter pad I fitted to the vial.



5. Screw the vial adapter onto the flask until light resistance is felt, then (with discretion) tighten up to a **further three notches** and no more.



6. Repeat for the remaining SampleGenie3 assemblies.

7. Fill with samples, balancing each assembly to within 10 g.

8. Load the SampleGenie3 assemblies into the Rocket rotor in a balanced configuration.

Caution: Do not over-tighten. Over-tightening can result in breakage of the sample holder causing unrecoverable sample loss.

Caution: Sharp, metallic tools can scratch the glass sealing face of the flask, causing leaks that may result in unrecoverable sample loss. Use the Genevac seal removal tool only for prizing the vial seal from the flask.

Retightening before restart

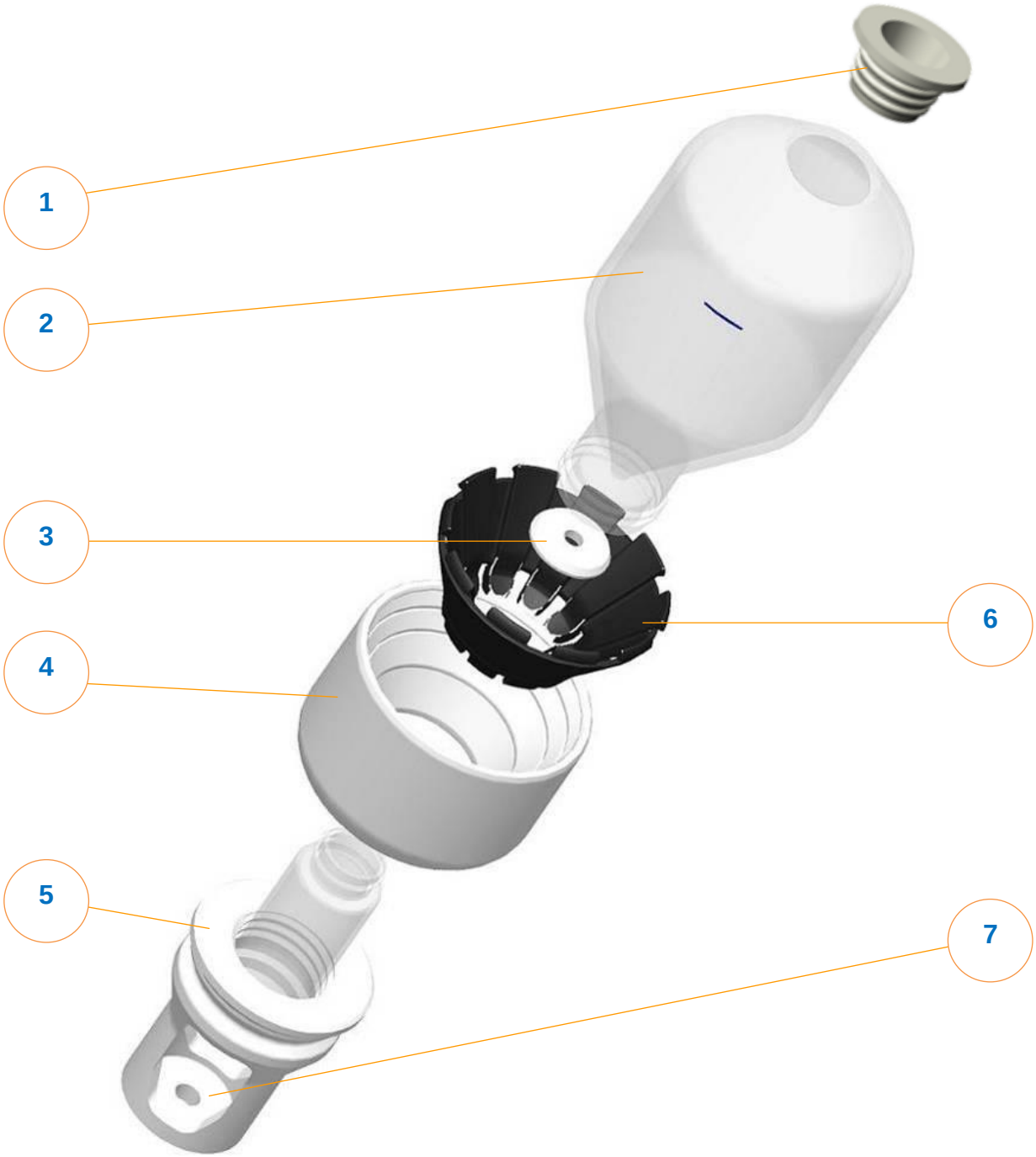
Once the vial adapter is tightened, the seal begins to compress gradually. This can cause a reduction in seal pressure which, over time, and may lead to the seal leaking. Ideally, sample holders should be prepared, loaded into the evaporator and the evaporator started straight away.

If there is a delay between preparing the sample holders and starting the evaporator, the vial adapters should be retightened.

The vial adapters should also be retightened whenever the evaporator is stopped and restarted.

SampleGenie[2]

SampleGenie[2] has been superseded and is no longer available as a complete set. Spare parts are available for the legacy product; new systems are supplied with SampleGenie[3]



Note: The assembly shown is for use in Rocket evaporators that do not have flask adapters fitted to the rotor.

Spare parts

Item	Description	Part number	Quantity in set
1	Flask splash cap	70-1265	6
2	SampleGenie^2 flask	70-1195	6
3	SampleGenie^2 vial seal - white viton	70-1363	▪
	SampleGenie^2 vial seal - perfluoroelastomer	70-1364	▪
4	SampleGenie^2 collar	70-1318	6
5	SampleGenie^2 vial adapter	▪▪	6
6	Collar pad	70-1317	6
7	Vial adapter pad	70-1323	6

▪ Specify quantity when ordering

▪▪ Please supply a sample of your vials, Genevac will supply vial adapters to match (size limits apply)

Caution: Do not fit a SampleGenie^3 collar to a SampleGenie^2 flask.

Vial adapters

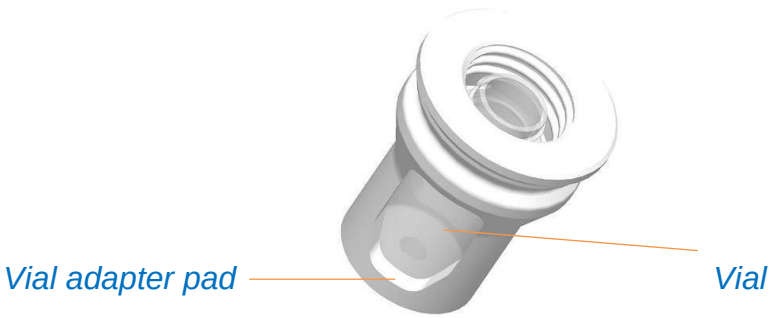
A range of ***vial adapters*** is available to suit vial sizes from 15 to 28 mm in diameter, and 35 to 70 mm in length.

A two-letter code on the base of the vial adaptor, indicates its compatibility; only use the vial adapter with the SampleGenie set and vial type for which it was specified. For further information, contact your local Genevac representative.

Vial adapter pad

Vial adapters for vials of 25 mm diameter and larger (including 20 ml scintillation vials) have a ***vial adapter pad*** which clips into a recess in the base of the vial adapter well; this cushions the vial, reducing the stress caused by centrifugal load.

Take care to ensure the vial adapter pad is not lost or separated from the vial adapter when handling or cleaning the assemblies. Check the condition of the pad before every use and replace at the first sign of wear.



Note: A vial adapter pad must be used with vials of 25 mm diameter or larger.

Instructions

1. Insert the ***collar pad*** into the collar and press to snap them together (they can subsequently remain assembled or can be separated for cleaning).

2. Insert the ***vial seal*** into the neck of the flask, with the chamfered side facing towards the flask, and push until it locates against the shoulder of the flask.

3. Place the ***SampleGenie collar*** over the end of the flask so the ***collar pad*** rests against the flask shoulder.

4. Place the vial in the ***vial adapter***.

5. Screw the vial adapter onto the flask.

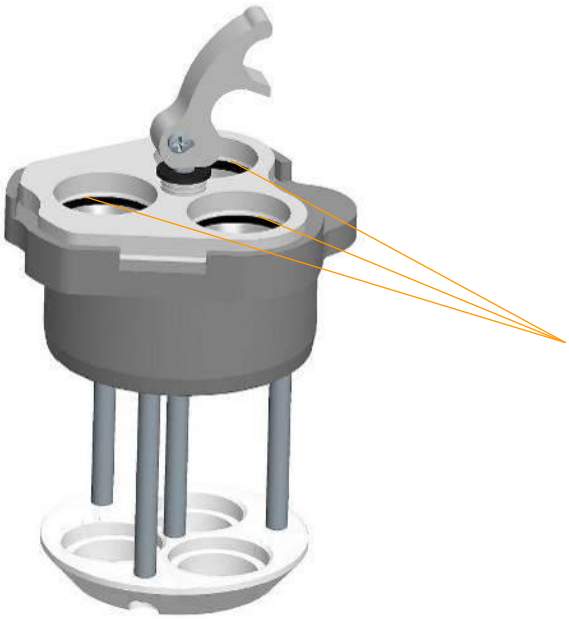
6. Repeat for the remaining SampleGenie assemblies.

7. Fill with samples, balancing each assembly to within 10 g.

8. Load the SampleGenie assemblies into the Rocket rotor in a balanced configuration.

ASE Tube Puck

Each ASE tube puck, accepts three ASE tubes or Flip-Flops, allowing a total capacity of 18 tubes in the evaporator.



Spare parts

Description	Part number	Quantity in set
ASE tube puck – complete assembly	70-1282	6
Puck seal	70-1287	18

Instructions

1. Load three ***ASE tubes*** into a ***puck assembly*** and push them down so they rest on the base of the puck.

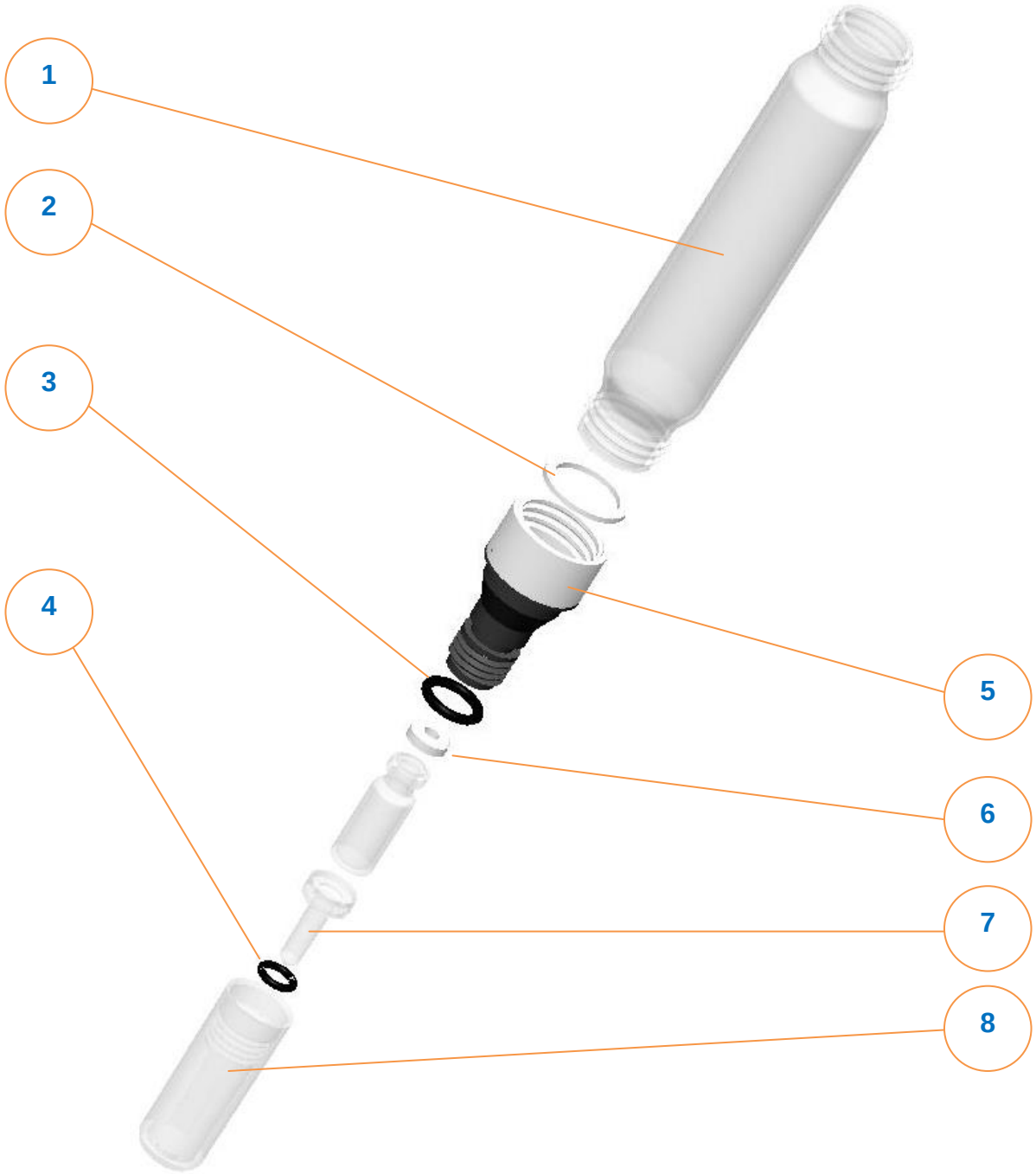
2. Press down the clamping lever.

3. Check the tubes are securely clamped. If necessary, release the clamp and agitate the tubes to reseat the puck assembly O-rings; then re-clamp.

4. Load the puck assemblies into the Rocket rotor.

Flip-Flop

The Flip-Flop sample holder format simplifies the process for concentrating the sample extract from a Dionex ASE® system* by eliminating the need to transfer samples by a separate process.



Spare parts

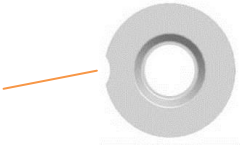
Item	Description	Part number	Quantity in set
	Complete assembly with white viton seals	70-1295	18
	Complete assembly with perfluoroelastomer seals	70-1296	18
1	Flip-Flop tube	70-1297	100
2	Tube seal - white viton	70-1304	20
	Tube seal - perfluoroelastomer	70-1306	20
3	O-ring for funnel	70-1299	20
4	O-ring for ejector peg	70-1302	20
5	Funnel	70-1298	18
6	Vial seal - white viton	70-1359	▪
	Vial seal - perfluoroelastomer	70-1360	▪
7	Vial ejector peg	70-1301	18
8	Vial cover	70-1300	18

Vial seals

Flip-Flop tube seals are available in low leachable white viton or highly resistant perfluoroelasteomer. For identification purposes, perfluoroelastomer seals have a small notch in the periphery of the seal.

White viton seal

Notch



Perfluoroelastomer seal

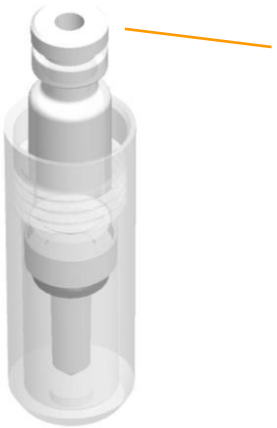
Note: Always check to make sure the sample holder seals are compatible for use with the solvent being evaporated. See: ***Acceptable solvents***.

Instructions

1. Make sure there is an O-ring fitted to the ***vial ejector peg***, then place the ejector peg into the ***FF vial cover***. The pin of the ejector peg should extend through the hole in the base and should be able to rotate freely when twisted.

2. Insert a vial into the ***vial cover*** so it sits on the ejector peg. **Note:** The vial can be accessed by pressing the ejector peg.

3. Place the ***vial seal*** on top of the vial so the lip of the seal faces the vial and the flat side faces upwards.



4. Screw the vial cover onto the funnel and tighten, using only your fingers. Check as you tighten to feel if the vial ejector peg can still rotate, as soon as the ejector peg is no longer free to rotate:

   - For white viton seals, tighten the assembly a further $^{1}/_{3}$ of a turn
   - For perflouroelastomer seals, tighten the assembly a further $^{1}/_{4}$ of a turn.

5. Make sure a tube seal is fitted to the funnel and screw it on to the Flip-Flop tube.

   The assembly is now ready for use.

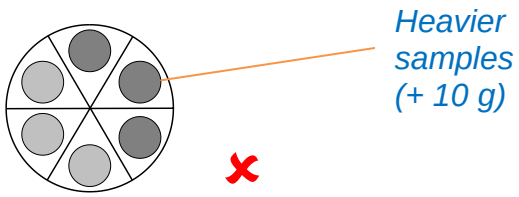
Caution: Follow the instructions carefully. The vial cover and funnel must be tightened correctly. If the assembly is too tight, the vial cover may be damaged; too loose, the seal may leak and cause damage to the samples.

Loading Sample Holders

Balancing

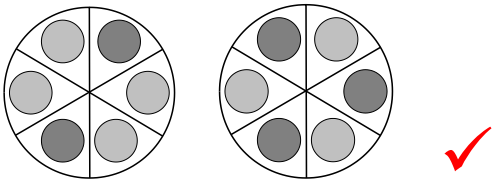
To avoid unnecessary wear and tear to the evaporator, individual sample assemblies must be balanced to within 10 g. Avoid the cumulative imbalance by distributing any minor weight variations evenly around the rotor.

Rotor imbalance



Individual samples are balanced within 10 g, but heavier samples are clustered together causing a cumulative imbalance across the rotor.

Rotor balanced



Samples are balanced within 10 g and minor variances are distributed around rotor.

Blanking plugs

Seal any unused rotor positions using blanking plugs. A set of six blanking plug can be ordered using Genevac part number 04-5865/S.

Alternatively, use empty sample holders to seal the rotor positions.

Cleaning and Maintenance

General cleaning

Clean the assemblies frequently or after any contamination by samples (either leakage or spillage). Not all components of sample holders will tolerate exposure to solvents. For example, SampleGenie[3] includes non-wetted elastomer seals that fit between the glass and aluminum components and are designed to provide a barrier to the steam environment of the Rocket outer vacuum chamber only. They may be damaged if solvent is splashed or spilt on them.

If solvents are splashed or spilt on sample holder assemblies, clean them thoroughly, so all traces of solvent and sample material are removed. Disassemble the sample holder to the component parts shown on the preceding pages and clean the parts separately. Use a cloth or paper towel, dampened with a suitable cleaning solvent such as methanol; then rinse all parts in clean water and dry fully before use.

The following page provides additional instructions for the cleaning of specific sample holder types.

Caution: Do not quench or submerge sample holders in any cleaning solvents (including water).

Flask assembly cleaning

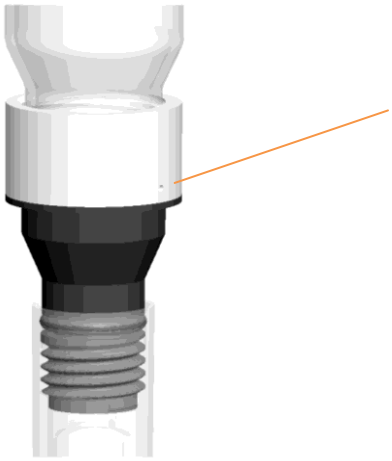
- Standard flasks and GC vial system flasks may be sterilized at temperatures up to 250°C
- SampleGenie3 flasks may be sterilized at temperatures up to 120°C
- Avoid rapid temperature changes when sterilising flasks; do not load cold flasks into a preheated oven, do not quench hot flasks in cold water
- With collars and pads removed, standard flasks may be cleaned in dishwashers that have a suitable “spindle tray”.
- When cleaning SampleGenie^3, do not separate the aluminium part from the glass.
- For SampleGenie^3, do not use cleaning solvents on the outside of the holder, the PTFE holder for the vial seal may be rinsed using a suitable cleaning solvent.

Flip-Flop cleaning

The following parts come into contact with sample material and must therefore be cleaned between each use:

- Flip-Flop tube
- Tube seal
- Funnel
- Vial seal.

A small hole is provided on the side of the funnel so a narrow tool (such as a paper clip) may be inserted to remove the tube seal.



Insert a narrow tool here to remove the tube seal

General maintenance

Check all parts frequently and replace any defective seals at the first sign of wear.

Flask assembly maintenance

Do not mark or apply labels to flasks around or below the level where the rotor seal locates. Check the flasks for scratches chips and cracks, if the flask is in any way damaged, do not use it.

Puck assembly maintenance

For reliable operation, it is essential that the puck assembly O-rings form a tight seal against the ASE tubes and do not leak when the clamping lever is pressed down. To avoid compressing and permanently distorting the O-rings and seals:

- Do not leave pucks in the evaporator for long periods after the evaporation finishes
- Leave the puck clamping lever in the upright position (un-clamped) when not in use
- Leave the Flip-Flop disassembled when not in use.

Flip-Flop maintenance

- Do not leave the Flip-Flop funnel to soak in any cleaning solvent (including water)
- Use only high quality vials. Genevac recommend 60 ml ASE collection vials from I-Chem or Dionex.

General routine checks

Check the condition of all sample holders before each use; if there is any structural damage (if any part of a sample holder is bent or deformed) do not use it. Contact Genevac Service for evaluation.

Replace any defective seals or O-rings at the first sign of wear.

Flask assembly checks

If vial adapter pads are used, check their condition before every use and replace them at the first sign of wear.

Flasks are consumable items and should be replaced at the first signs of damage.

Caution: Scratched or damaged flasks can break, resulting in unrecoverable sample loss and possible damage to the evaporator.

Flip-Flop and Puck checks

The Flip-Flop assemblies can be damaged by over tightening, check them before every use and replace them at the first sign of damage or wear.

Make sure the vial ejector peg can slide up and down freely inside the vial cover. If the peg becomes tight, clean it; if the peg is tight and cleaning does not help, replace it.

Troubleshooting

Rectifying faults and errors

Err code	Cause	Corrective action
13	Fail vacuum start up test	Check blanking plugs or empty flasks are fitted to unused rotor positions
17 - 20	Out of balance (critical)	Rebalance samples
21	Out of balance (warning)	Rebalance samples
24 - 29	Vacuum integrity failure	Check Rocket flask seals and sample holders are undamaged and correctly inserted. Refer to ***Maintenance***
74 - 77	Leak detected by ***System Test***	Check flask seals, sample holder seals and O-rings

Other troubleshooting

Symptom	Cause	Corrective action
Excessive vibration / noise	Rotor imbalance	Rebalance samples
Excessive evaporation times	Poor vacuum or leak between vacuum chambers	Refer to Rocket User Manual, run ***System Test*** to diagnose problem
Sample holders difficult to insert in rotor	Flask seal trapped	Avoid pressing down rotor centrifugal clamps when inserting sample holders
		Manipulate seal into correct position by hand. Dampen seals with deionised water, refer to ***Flask seals***
Sample holders difficult to remove from rotor	Flask seal stuck to sample holder	Twist sample holder to break seal
Sample leaks from Flip-Flop	Vial cover / funnel not screwed together tightly enough	Tighten vial cover to funnel, refer to ***Flip-Flop***
	Vial seal worn	Replace vial seal

Technical Data

Specifications

Standard flask	
Flask	Borosilicate glass
Capacity per flask	400 ml

GC vial system	
Flask	Borosilicate glass
Capacity per flask	350 ml
Vial seals	White viton or perfluoroelastomer

SampleGenie	
Flask	Borosilicate glass
Capacity	250 ml plus volume of vial
Vial diameter - max	28 mm
Vial diameter - min	15 mm
Vial length - max	70 mm
Vial length - min	35 mm
Vial seals - SG[2]	White vitonor perfluoroelastomer
Vial seals - SG[3]	PTFE sealWhite silicon rubber

ASE tube puck	
Capacity	3 x ASE tubes per puck
Vial seals	White vitonor perfluoroelastomer
Tube seals	White Viton or perfluoroelastomer

Acceptable solvents

Solvent	Abbreviation	* Viton	▲ Perfluoro / SampleGenie[3]
Acetic acid	$MeCO_2H$		✓
Acetic anhydride			✓
Acetonitrile	MeCN, ACN		✓
1-Butanol		✓	✓
2-Butanol		✓	✓
Butanone	MEK		✓
tert-Butyl alcohol	*tert*-butanol		✓
Chloroform	$CHCl_3$	✓	✓
Cyclohexane		✓	✓
1,2-Dichloroethane	DCE		✓
Dichloromethane	DCM		✓
Diethyl ether			✓
Diisopropyl ether	DIPE		✓
Dimethyl acetamide	DMAc		✓
N,N-Dimethyl formamide	DMF		✓
1,4-Dioxane			✓
Ethanol	EtOH		✓
Ethyl acetate	EtOAc		✓
Formic acid	HCO_2H		✓
Heptane		✓	✓
Hexane		✓	✓
Methanol	MeOH		✓
Methyl teriary butyl ether	MTBE		✓
Pentane		✓	✓
Petroleum ether	pet ether	✓	✓
1-Propanol		✓	✓
2-Propanal	IPA, *iso*-propanol	✓	✓
Propanone	Acetone		✓
Pyridine			✓
Tetrahydrofuran	THF		✓
Toluene			✓
Triethylamine	Et_3N		✓
Trifluroacetic acid	TFA		✓
Water	H_2O	✓	✓
Water & Acetonitrile			✓
Water & Methanol			✓
Water & Ammonia			✓
TFA & DCM			✓

* Limitations apply to ***GC vial system***[2], ***SampleGenie***[2], and ***Flip-Flop*** with viton seals.

▲ Limitations apply to ***GC vial system***[2], ***SampleGenie***[2], and ***Flip-Flop*** with perfluoroelastomer seals and to SampleGenie[3].

Consult your Genevac representative for advice before using Rocket sample holders with any solvents that are not listed.

Colour variation of surface finish

For some components, the colouring of surface finish may vary slightly from batch to batch; for instance, one batch of vial adapters may appear darker than another. Where this occurs it does not affect the performance or integrity of the component or assembly.

Patents

Genevac products are protected by the following patents and patent applications:

0905450.3
PCT/GB2010/050523

Amendment control

Issue	Reason for Change	Date Issued
1-2	Part numbers: replace individual part numbers with part number for sets	26-Nov-09
1-3	Vial seal images and instructions update to reflect new design	02-Feb-10
1-4	Flip-Flop introduction	08-Apr-10
1-5	Vial adapter pad must be used for vials > 25 mm diameter	10-Jun-10
1-6	Puck maintenance notes added. Flip-Flop funnel tightening instructions added. Recommended practice and inspection-and-cleaning instructions added.	05-Jul-10
1-7	Sample holder loading instructions (twist and insert).	22-Jul-10
2-1	Flip–Flop cleaning instructions added. Troubleshooting added. Options added. Patents added.	31-Mar-11
2-2	GC vial seal orientation instruction added.	24-Aug-11
2-3	Flip-Flop funnel cleaning instruction amended: avoid soaking.	15-Sep-11
2-4	SP Scientific Service Email address added. Solvent compatibility added. Part number tabled added. Splash cap part number added. Puck tube tightness check added.	10-Feb-12
2-5	Troubleshooting layout revised. Cover page revised.	22-Feb-12
2-6	GC vial system design change. Seal compatibility table update. 70-1429 now includes O-ring.	14-Nov-12
2-7	SampleGenie^3 introduction.	28-May-13
2-8	Maximum sterilisation temperature specified for SG^3. Vial seal removal using blunt non-metallic tool: caution added. Do not use dishwasher. Flask splash cap illustration added.	04-Jun-13
2-9	Vial adapter to be removed from GC vial system^2 flask when not in use, caution added. Perfluoroelastomer seals not required for SG^3.	17-Jun-13
2-10	Seal compression due to reduced seal pressure - instruction added.	14-Jul-13
2-11	Seal removal tool added.	19-Jul-13
2-12	US contact address updated. Retighten SG^3 vial seals before restarting and after delay. Layout and clarification review. Standard flasks may be cleaned in dishwasher with spindle tray.	22-Oct-13
2-13	Specify do not quench or soak in any solvent including water.	15-Nov-13
2-14	Colour variation of surface finish added. Original instructions statement added.	18-Feb-14

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Useful information

Read these instructions before using the Rocket sample holders and keep them near the system for easy reference. Your attention is drawn in particular to the ***Safety*** section.

These instructions are correct at time of going to press and may be subject to change without notice. Some of the features described within this user manual may not apply to equipment manufactured before this manual's publication date.

If you need to contact Genevac for assistance, use either the telephone or fax Hotlines shown. Alternatively, email or visit our web site.

The sample holders should not be discarded in your regular disposal stream. Contact your Representative or Genevac for proper disposal instructions.

Within the EU, it is Genevac's responsibility under the WEEE directive to provide for the recycling of Genevac products.