

Agilent Vac Elut SPS 24 Manifold

User Guide

A clear revolution in sample processing

Agilent offers the most technologically advanced sample processing station for solid phase extraction. Designed for use with Bond Elut extraction columns, the Vac Elut SPS 24 makes sample preparation easy, quick and efficient.

- The unique dual position lid allows the user to select either the “waste” or “collect” mode.
- In the “waste” position, the solvents flow through the waste funnel to an external vacuum trap, keeping the sample collection area clean.
- In the “collect” position, the sample needle tips direct the purified eluent into the sample collection tubes avoiding cross contamination.
- 24-Position manifold allows for increased sample throughput.
- The glass vacuum basin eliminates guesswork – you know when sample collection is completed.
- The waste funnel can be removed and cleaned whenever necessary.
- Replaceable stainless steel needle tips or polypropylene needle tips provide durability and flexibility.
- A selection of collection racks allows you to use the appropriate collection vials for your analysis.
- Each unit includes: 30 polypropylene needle tips, 30 stainless steel needle tips, 30 luer plugs, 6 elastic lid fasteners and 1 needle tip ejector.



Materials required with Vac Elut SPS 24 (parts not included):

- Sidearm Flask (vacuum trap) 500 mL or larger designed for vacuum filtration.
- Vacuum tubing 3/8 in. id.
- Vacuum source (recommended pump efficiency is 1.2 cf/in² or greater).

Optimum vacuum is at least 15 in. of Hg.

How to use the Vac Elut SPS 24 (see Figure 1):

1. Connect a sidearm flask between the vacuum source and the vacuum exit valve (#16) of the SPS 24 to collect waste solvents. Be sure to use vacuum tubing so that connecting lines do not collapse.
2. Place the collection rack (#12) with labeled collection tubes into the glass vacuum basin (#15). Lock the waste funnel (#10) into the waste tower so that the tops of the collection tubes extend above the funnel.
3. Position the 24-place cover on the glass vacuum basin (#15). The 24-place cover, collection rack and glass basin are keyed to fit in only one position to eliminate processing mistakes. Insert Bond Elut cartridges into the stainless steel needle tips (#4) or the polypropylene needle tips (#2). Unused ports are capped with the luer plugs (#3).
4. Use the vacuum exit valve (#16) to turn the vacuum on and off. Optimum vacuum is at least 15 in. of Hg. The vacuum control valve (#14) can be used to control the flow rate through the columns.
5. In the "waste" position, the solvents flow through the waste funnel to an external vacuum trap. To rotate the lid, hold the lift tabs (#5) with both thumbs and lift up on the upper lid (#6). Rotate the lid to the "collect" position and release to drop the delivery tips into the collection tubes.

Extraction hints:

1. With vacuum off, lift and rotate the lid in the "waste" position and apply conditioning solvent to each Bond Elut cartridge. Apply vacuum to draw the solution through all cartridges at the same time. Continue with sample application and any rinse steps, always applying solvents with the vacuum off.
2. With vacuum off, lift and rotate the lid in the "collect" position and apply elution solvent to all columns. Apply vacuum to collect the compound of interest.

Maintenance and troubleshooting

If the unit will not hold or draw vacuum:

- Check to see that all unused ports are plugged.
- Check to see if the vacuum exit valve (#16) is in the open position.
- Check to see if all lid fasteners (#13) are attached.
- Check to see that the upper lid has dropped securely into either the "waste" or the "collect" position.
- Check to see if the seals (#7, #9) are worn. Replace if necessary.

To replace:

- **The upper lid seal (#7)** – Disassemble the lid and remove old seal. Press new seal into the groove. Reassemble the lid as shown in Figure 1, making sure that position indicator is in the correct position.
- **The Lower Lid Seal (#9)** – Remove the old seal and clean the bonding surface. Remove the tape backing from the new seal and install the new seal.
- **The Needle Tip(s) (#2) (#4)** – Using the ejector: place the ejector under the stainless steel needle tip or the polypropylene needle tip, then push down the lever on the ejector to pop the needle tip out.

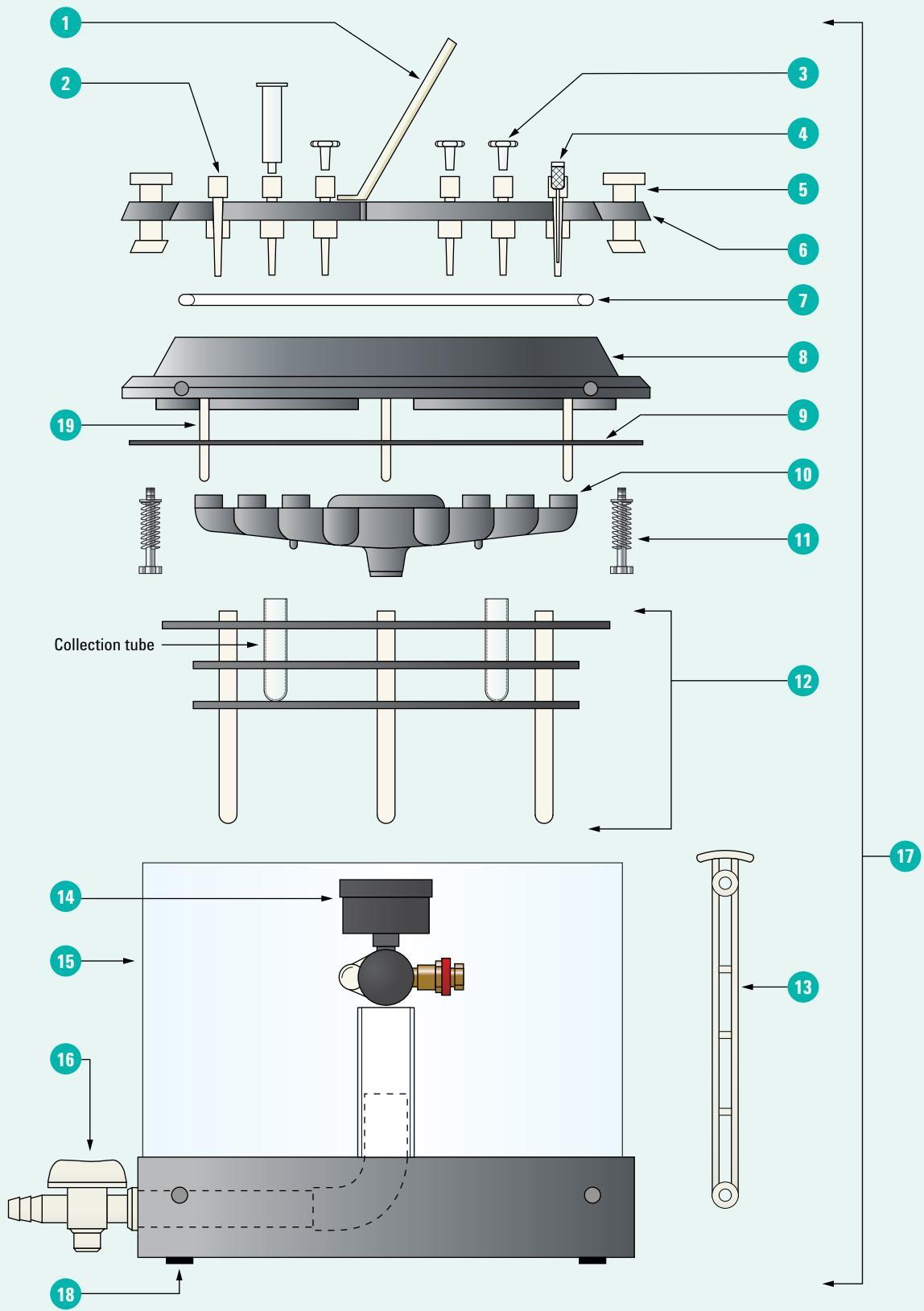


Figure 1. Vac Elut 24 schematic.

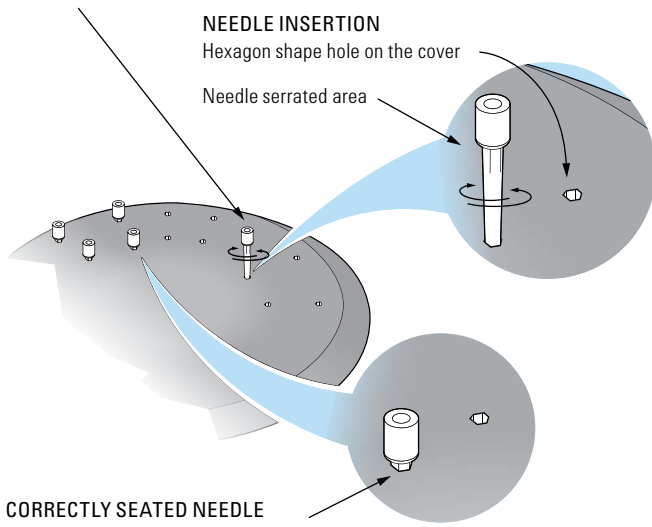
Ordering information

| Item No. | Part No. | Qty | Description |
|----------|---|-----|--|
| 1 | 12234519 | 1 | Ejector tool |
| 2 | 12234511 | 25 | Polypropylene needle tips |
| 3 | 12234518 | 25 | Luer Plugs |
| 4 | 12234042 | 25 | Stainless steel needle tips (in polypropylene enclosure) |
| 5 | - | 2 | Lift tab |
| | 12234025C | | Complete Upper lid assembly (contains Parts 5-9, 11, and 19) |
| 6 | 12234025 | 1 | Upper lid |
| 7 | 12234051 | 1 | Seal, upper lid |
| 8 | - | 1 | Cowling |
| 9 | 12234050 | 1 | Seal, lower lid |
| 10 | Waste funnel (for the following size): | | |
| | 12234035 | 5 | 10 x 75 mm |
| | 12234032 | 5 | 12 x 75 mm or 13 x 100 mm |
| | 12234029 | 5 | 16 x 100 mm or 12 mL/15 mL Conical tubes |
| 11 | 12234021 | 1 | Lid screw kit |
| 12 | Collection rack | | |
| | 12234026 | 1 | Collection rack and funnel set (10 x 75 mm) |
| | 12234030 | 1 | Collection rack and funnel set (12 x 75 mm) |
| | 12234031 | 1 | Collection rack and funnel set (13 x 100 mm) |
| | 12234028 | 1 | Collection rack and funnel set (16 x 100 mm) |
| | 12234027 | 1 | Collection rack and funnel set (for 12 or 15 mL conical tube) |
| 13 | 12234034 | 6 | Elastic lid fasteners |
| 14 | 12234044 | 1 | Vacuum control kit |
| | - | | • Vacuum gauge |
| | 12234013 | | • Vacuum release ball ring |
| | - | | • Vacuum control valve |
| 15 | - | 1 | Glass vacuum basin / base |
| 16 | 12234005 | 1 | Exit valve – waste – tower – repair kit |
| | | | • Vacuum exit valve with exit tube |
| | | | • Elbow |
| | | | • Waste tower |
| 17 | Complete systems | | |
| | 12234003 | 1 | Vac Elut SPS 24 (with 10 x 75 mm Collection rack) |
| | 12234041 | 1 | Vac Elut SPS 24 (with 12 x 75 mm Collection rack) |
| | 12234022 | 1 | Vac Elut SPS 24 (with 13 x 100 mm Collection rack) |
| | 12234004 | 1 | Vac Elut SPS 24 (with 16 x 100 mm Collection rack) |
| | 12234040 | 1 | Vac Elut SPS 24 (with 12 or 15 mL Conical collection rack) |
| 18 | - | | Bottom rubber pads |
| 19 | - | 3 | Cowling locators |

Table 1. Illustrated parts manual Vac Elut SPS 24.

NEEDLE TIP INSTALLATION PROCEDURE

Lightly wiggle the needle tip while pushing it down in the hole. Press it with your thumb and then using the ejector handle push it hard against the hole to assure a good contact (also see Figure 3).

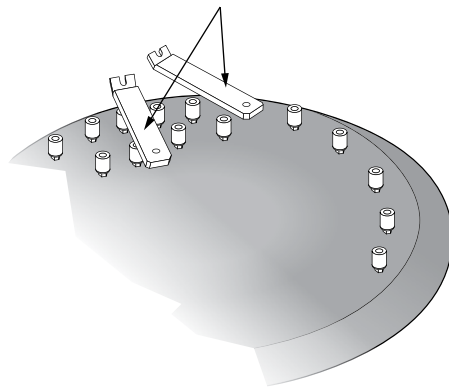


CORRECTLY SEATED NEEDLE
Showing aligned serrations with corners of hexagon hole

WARNING:
When installing any needle tips, cover must be placed on the glass chamber or damage to the lid and / or alignment posts will occur.

Figure 2.

Place ejector (handle portion) horizontally or diagonally across two needles and press down to assure proper vacuum seal.



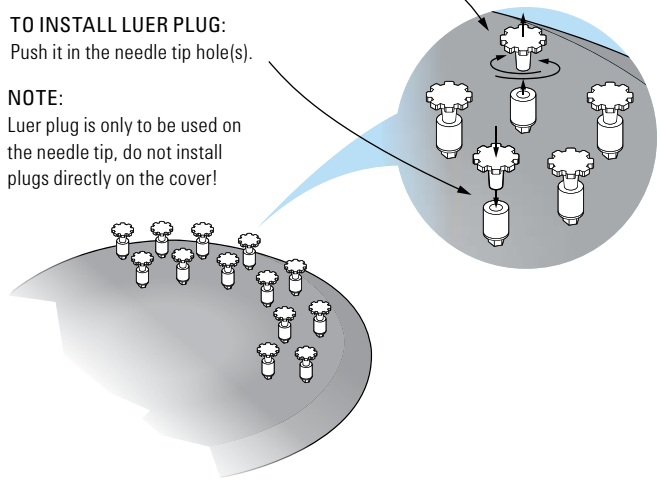
TIP:
The same method can be used to install luer stopcock valves.

Figure 3.

TO REMOVE LUER PLUG:
Slowly twist the plug to break the contact. When it is loosened, pull the plug away.

TO INSTALL LUER PLUG:
Push it in the needle tip hole(s).

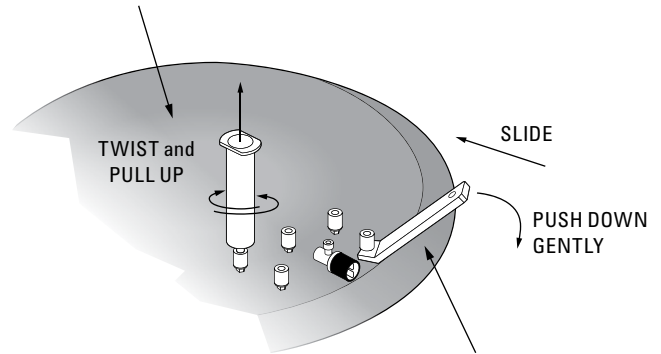
NOTE:
Luer plug is only to be used on the needle tip, do not install plugs directly on the cover!



WARNING:
When removing plug(s), do not pull the plug straight upward, doing so can disengage the needle tip.

Figure 4.

TO REMOVE CARTRIDGES:
Empty tube! Twist tube to break off contact, and then pull upward. Pulling directly upward without twisting is not recommended and can cause the needle tip to disengage from the cover.



TO REMOVE ANY OF THE NEEDLES / STOPCOCK VALVES (IF USED):
Slide ejector under the needle tip or stopcock valve and push ejector down.

CAUTION:
Push down gently; pushing the ejector down too fast or too hard will cause the part to eject vigorously.

Figure 5.

Note: Pictures shown are for illustration purposes only

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