

SUMMARY OF COMMERCIALY AVAILABLE PNEUMOPERITONEUM SMOKE EVACUATION SYSTEMS

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To prevent the transmission of viruses or any other potentially infectious source during laparoscopic procedures, SAGES [recommends](#) a closed system that uses an ULPA filter.

1. Polyethersulfone syringe filter (0.05 microns) with Luer-Lok (Sterile)

This ultrafilter can be connected via Luer-Lok to a standard insufflation tubing with the flow going away from the patient and the outlet end of the PES Syringe filter connected to your suction system/canister. *The relatively low cost and availability of this product may make it an option when other options are not feasible.



2. PLUMEAWAY, Cooper Surgical, Inc.

Hooks onto a standard laparoscopic port, smoke evacuates passively



3. NEBULAE I, Northgate Technologies, Inc

Has its own tubing that allows real time insufflation adjustments to improve visualization and warm insufflated air. Also has smoke evacuation mode that actively sucks out the pneumoperitoneum.



5. MEGADYNE MEGAVAC PLUS, Ethicon

There are 3 megadyne models. Only the Megadyne MegaVac Plus will accommodate laparoscopic smoke evacuation and it does not require special tubing. For open cases, it requires a Megadyne bovie pencil that comes with a smoke evacuator.



6. PNEUMOCLEAR, Stryker, Inc.

Requires its own tubing. Insufflation tubing goes to one port. Desufflation tubing attaches to a separate port. There is a desufflation mode that the circulating nurse can activate.



7. RAPIDVAC™, Medtronic, Inc.

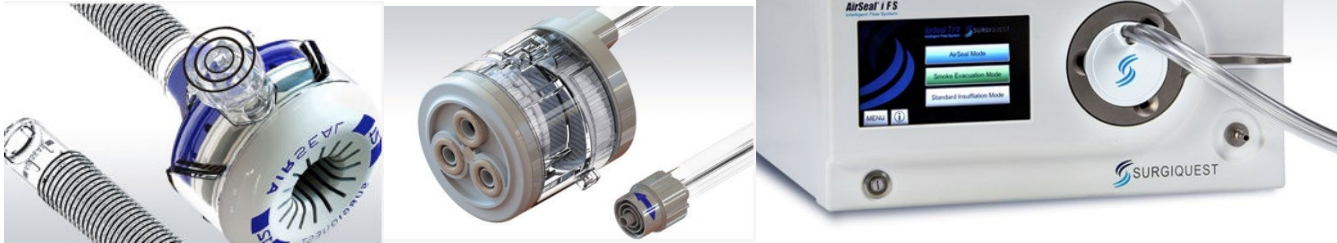
Also requires its own tubing for lap cases and its own bovie pencils with the smoke evacuator tubing.



8. AIRSEAL®, ConMed

Requires its own tubing

In the air seal mode, which is designed to prevent over inflation of the abdomen by the pneumoperitoneum, the released air is vented through an open side port and thus is NOT filtered. As such, a viral load can be emitted through this port. This release can be overcome by connecting another smoke evacuator with a ULFA filter to another port or by using a suction irrigator through a separate port. The suction from this port can be connected to a ULFA filter.



9. Buffalo Filters, ConMed

This is a line of surgical smoke evacuators that have to contain four stages of filtration in a single housing with a built-in pre-filter, special blend of activated carbon, ULPA filter and post-filter ensuring 99.999% efficiency, down to 0.1–0.2 micron. (Please see ConMed's official statement below)



10. KARL STORZ Endoscopy-America, Inc.

1. S-PILOT Smoke Evacuation Management



KARL STORZ offers with the S-PILOT® a modular solution for smoke evacuation management. Its modular design offers a smooth, cost-efficient and customizable integration into existing systems. It can be used in combination with a third-party suction system or the central suction. Used with in-line filter 031111-10.

An automatic activation of suction is possible with KARL STORZ high-frequency surgical units but also with third-party equipment. Individual control via footswitch is possible at any time. Please contact your local KARL STORZ representative for a solution that meets your individual needs or for any further questions.

2. 031110-10 Passive Smoke Evacuation Filter



031110-10 Smoke Evacuation Filter Set, with 50 cm tube and male LUER-Lock, sterile, for single use, package of 10, for use with trocars with LUER-Lock connectors.

11. Bovie Smoke Shark™ Surgical Smoke Evacuator

Symmetry Surgical's smoke evacuation portfolio includes the Bovie® Smoke Shark™ Surgical Smoke Evacuator and related accessories. The Smoke Shark™ II provides 25CFM of evacuation, with a 35-hour, 4-stage ULPA filter. The filter is efficient in trapping 99.999% of particles and microorganisms 0.1 – 0.2microns in size. The Ultraquiet, Bovie® Smoke Shark™ II is a compact unit designed to fit in any OR and is compatible with most electrosurgical units and devices.

