MEYER-HAAKE
MEDICAL INNOVATIONS

smokeSTAR

PROFESSIONAL SMOKE EVACUATION FOR
YOUR SAFETY IN THE OPERATING THEATRE!

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SURGICAL SMOKE – THE UNDERESTIMATED DANGER

Hardly visible but dangerous

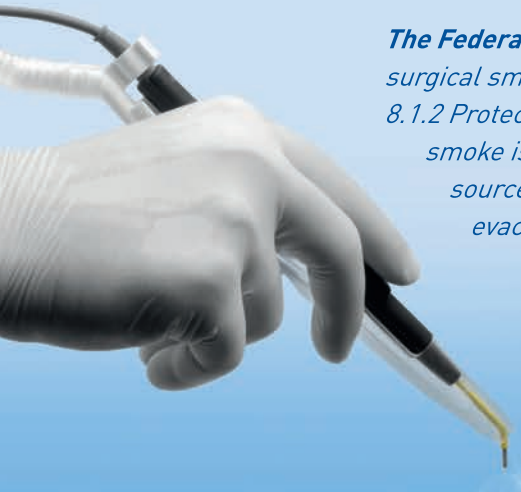
Modern surgical procedures working with heat, radiation or ultrasound to gently sever or scab tissue, or to stop bleeding, are nowadays indispensable in the operating theatre. The use of high energy in ultrasound, high frequency, radio frequency and laser surgery results in the production of toxic smoke. In the developing particles 41 different chemical substances, some highly toxic, have been identified. In addition to erythrocytes and living cell material contaminants such as viruses, bacteria, mycobacteria and fungi were also found. Viral and HIV-DNA were also discovered. Depending on the type of surgical intervention, the operating staff is exposed to the health hazardous smoke of ultra-fine particles for hours. This can cause, in addition to limited visibility and bad air in the operating area, symptoms of an acute intoxication, such as nausea, headache, weakness or muscle pain as well as irritation of the eyes and respiratory system. In addition, everyone involved is subjected to a possible infection and carcinogenic effect from the smoke.

Classic protective measures are not enough

- It is a mistake to believe that a surgical mask protects the operating surgeon and personnel against surgical smoke. The surgical mask was invented to protect the patient from droplet infection from operating personnel. A surgical mask only offers protection against 30% of surgical smoke, you inhale 70%!
- Laminar Flow in the operating theatre causes the surgical smoke to be swirled around and therefore also does not provide sufficient protection.
- Many expert teams have examined surgical smoke and have analyzed the many dangers and as a result in many countries smoke evacuation systems in the immediate operating area are already required by law.
- Cancer that results from inhaling surgical smoke has already been recognized as an occupational disease for nurses.

EXPERT OPINIONS

Recommendation of the Robert-Koch-Institute: *"The air in the operating theatre contains microbial loaded particles (e.g. skin cells) and smoke released when using HF surgery and lasers [224–226]. The National Institute of Occupational Safety and Health (NIOSH) and Occupational Safety and Health Administration (OSHA) recommend as a result of the risk analysis of toxic danger by surgical smoke from high frequency surgery or laser applications, the use of an efficient smoke evacuation system close to the operation site."* [1*]



The Federal Institute for Occupational Safety and Health: *"8.1.1 Danger – it has been proved that surgical smoke can also contain biological active components (cells, cell residue, viruses etc.) "; 8.1.2 Protective Measures- ...1. State of the art devices should be used. If the release of surgical smoke is not adequately prevented, it must be assessed whether it can be extracted at the source e.g. by using hand pieces with integrated suction or by using a separate local smoke evacuation."* [2*]

ISSA: *"4.2 Technical Protective Measures – The evacuation of surgical smoke at the source is technically the most effective protective measure..."* [3*]

* Translated by Meyer-Haake GmbH

1. Prävention postoperativer Infektionen im Operationsgebiet, 4.1.14 Belüftung und Klimatisierung. In: Bundesgesundheitsbl. - Gesundheitsforsch. - Gesundheitsschutz. Hg.: Kommission für Krankenhaushygiene und Infektionsprävention beim Robert Koch-Institut. Berlin: Springer Medizin Verlag. 2007. S.386,387.
2. 8.1 Chirurgische Rauchgase. In: Technische Regeln für Gefahrstoffe (TRGS 525). Hg.: Ausschuß für Gefahrstoffe, Bundesamt für Arbeitsschutz und Arbeitsmedizin. GMBl. 2014. S.22,23.
3. Technische Schutzmaßnahmen. In: Chirurgische Rauchgase: Gefährdung und Schutzmaßnahmen. Hg.: Internationale Sektion der IVSS für die Verhütung von Arbeitsunfällen und Berufskrankheiten im Gesundheitswesen. Hamburg: 2011. S.35

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FIGHT SURGICAL FUMES AT THE SOURCE

smokeSTAR
Daily protection from infection and disease from toxic materials – for the sake of your health

- With the 4-stage high performance filter, large particles, liquids, surgical fumes and odours as well as particles from 0.1 µm – 0.2 µm are filtered with an efficiency of 99.999%
- Highly cost efficient due to the long filter lifetime of 35 hours
- Quiet and efficient for concentrated work
- No unpleasant odours
- Safe protection from toxic materials
- For all high frequency, radio surgery, ultrasound and laser surgery devices
- Automatic smoke evacuation for all devices via trigger cable, foot pedal or remote control
- Compact device for equipment trolley, ceiling mounting, and stacked units
- Smoke evacuation directly from the point of origin by using a tube or tube with adapter for hand pieces
- Safe and quick handling due to the intelligent design of the device

smokeSTAR
Optimal view over the operation area – as in this knee operation

More Information about smokeSTAR?

We would be pleased to send you scientific articles about “Surgical Smoke” and will advise you competently. Just give us a call or send us an email.

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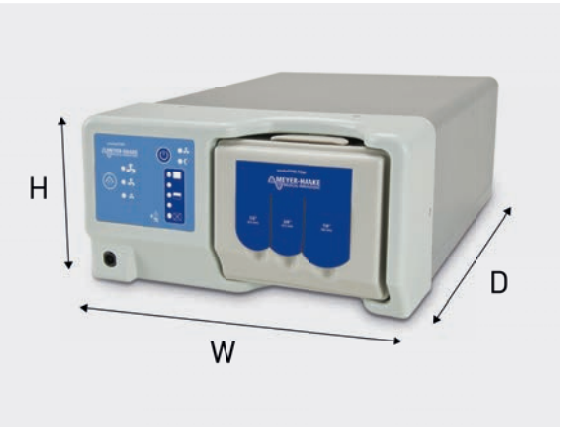
INVEST IN YOUR HEALTH! ONLY OPERATE WITH A SMOKE EVACUATION SYSTEM



Technical Data

Displacement	max. 708 l / min
Voltage	220-240 VAC / 100-120 VAC
Frequency	50 / 60 Hz
Dimensions in mm (HxWxD)	152 x 279 x 394
Weight	4.40 kg without filter and 5.50 kg with filter
Sound pressure level	<55 dB (A)
Medical device product class	I

SURGICAL SMOKE CAN CAUSE CANCER

PROTECT YOURSELF!
WITH smokeSTAR

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