

Standing together

against
surgical
smoke



Your Neptune SafeAir Smoke Evacuation Portfolio

- SafeAir Smoke Evacuation Pencil
- SafeAir Telescopic Smoke Evacuation Pencil
- SafeAir Compact Smoke Evacuator
- Neptune 3 Waste Management System

The choice is yours: scalable solutions

SafeAir Smoke Evacuation Pencils



Data shows that surgical smoke particles can travel 40 mph and multiply to more than 1 million particles/cubic foot in five minutes.^{1, 12} That's why professional organizations advocate "on tip" smoke evacuation directly at the surgical site.^{13, 14, 15, 16} To achieve this, we offer two SafeAir Smoke Evacuation Pencils; standard and telescopic. This enables use on open surfaces and inside cavities, giving you more functionality and more relief from surgical smoke.

2-in-1 monopolar pencils; easy, efficient way to perform smoke evacuation and electrosurgical cutting and coagulation

Captures smoke – and the potential hazards it carries – directly at the source for optimal effectiveness reducing exposure

Designed similar to electrosurgical pencil with emphasis on end-to-end balance; eases transition to a multi-functional pencil

Size, <1oz weight (21.7g without tubing or wire), and ergonomics help preserve surgeon's natural touch and technique

Compatible with the SafeAir Compact Smoke Evacuator and the Neptune System

A Compatible with a spectrum of SafeAir electrodes and Colorado Needles

B Tactile buttons provide security and control; available in push button or rocker switch

C Ribbing and knurling optimize grip and comfort

D Fully integrated suction/power cord is light and pre-stretched, for ease of motion and tangle-free cord management

E Electrode and suction sleeve telescope simultaneously; plus easy electrode changes since suction sleeve remains permanently attached

F Suction sleeve adjusts forward or backward, and encircles electrode for smoke capture at any angle

G Pencil shaft telescopes up to 4.75", for a smoke inlet reach of 5"

H Locking ring secures telescopic shaft

Surface use:

pencil shaft retracted with suction sleeve forward



Inside open cavities:

pencil shaft extended with suction sleeve backward



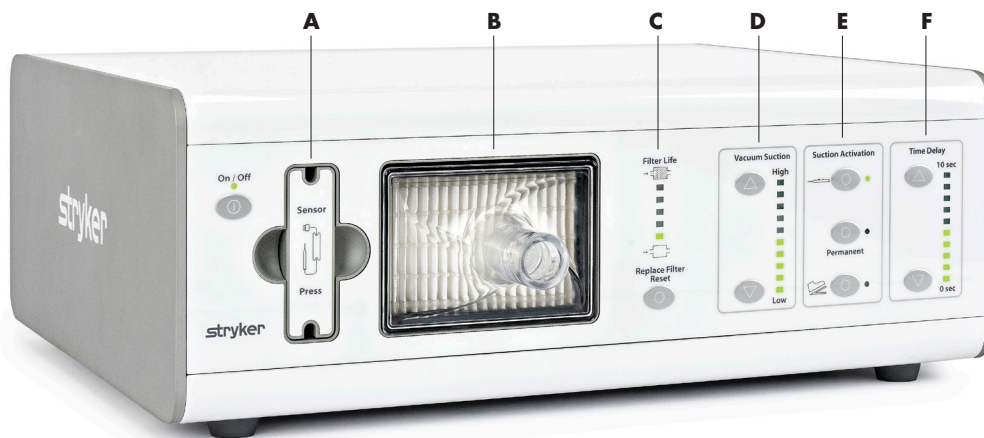
“I created a lot of Bovie smoke in my time...without any protection. The more I thought about it, the more I became convinced that this was the origin of my deadly disease.”

Anthony Hedley, orthopaedic surgeon and owner of the Hedley Orthopaedic Institute¹⁷

SafeAir Compact Smoke Evacuator

It's one small box that makes a big difference in your O.R. air quality. It provides suction for either SafeAir Smoke Evacuation Pencil (standard or telescopic) and is easily portable for use in the O.R. or other procedure rooms. But what you may like best are its many features that allow you to customize performance settings to suit the needs of various surgeons, patients and procedures.

- A** Auto activation via integrated sensor that detects pencil current
- B** ULPA filtration provides multiple benefits
 - ULPA media – captures potentially hazardous submicron particulates with 99.999% efficiency
 - Carbon media – activated charcoal bed removes volatile organic compounds and odors from the air
 - AORN compliant¹⁸
- C** Lighted indicator visibly tracks filter life; shows when change is needed
- D** Proprietary vacuum design ensures near instant “on-tip” suction at the power level set
 - No ramp-up time required to reach desired suction power
 - Customizable via 10 speed settings
- E** Multiple activation modes: automatic, permanent and foot switch
- F** Customizable time delay; up to 10 seconds of smoke evacuation after pencil deactivation



Simple to use; front panel coincides left-to-right with chronological setup steps

Easily portable with minimal footprint (28.66 lbs; 5.5" H x 14.96" W x 11.8" D)

Neptune 3 Waste Management System

For the ultimate in streamlined functionality, look to the Neptune 3 Waste Management System. Not only does it provide smoke evacuation, but also quickly and efficiently suction and locks away surgical site and floor fluids. The result is a simple way to perform multiple tasks while reducing exposure to potential hazards, from the floor you walk on to the air you breathe.

Safety and efficiency

- Reduces hazardous exposure by suctioning surgical site fluid, floor fluid and surgical smoke
- Integrated smoke evacuator comes standard; ULPA filtration helps fulfill AORN recommendations on surgical smoke¹⁸
- Closed system locks away suctioned fluids during cases, manifold changes, docking and transport; reducing exposure and spills
- Three layers of protection at manifold site via patented SealShut Technology; no open access points to internal canister
- Compatible with SafeAir Smoke Evacuation Pencils
- Auto mode automatically detects surgical smoke and adjusts flow
- Enables patient-to-patient use via simple manifold change



We're better,
together

Stryker's Smoke Free O.R. Program provides product recommendations, education and financing options that help smooth your transition to a smoke-free O.R. Here's how we can assist you on all fronts.

Flex Financial

provides a number of financing options and/or helps to customize an acquisition program that can make your new purchase possible.

Stryker's Learn Program

offers continuing education, including courses on smoke dangers/evacuation that can help you fulfill Step 7 of AORN's Go Clear program.

Implementation

our sales representatives and product specialists can help facilitate smooth product training and implementation.

ProCare Services

offers a range of service plans delivered by localized technicians.

Protecting you as you protect others

As part of the O.R. team, you provide lifesaving and life changing care every day. And you do it in an environment with inherent risks such as surgical smoke. Data shows it's a genuine health concern spurring clinical, quality and safety groups around the world to take action – including us. With simple device solutions, education and financing options we're here to help you create a safer, smoke-free O.R. By working together, we can change things for the better.

1 million particles/cubic feet

O.R. particles multiply from 60,000 particles/cubic foot to more than 1 million within 5 minutes of ESU activation¹



90% overall staff satisfaction

compared to 60% among
canister users²

82% of nurses

believe mandatory
evacuation will become
the law of the land³



75% of surgeons and 86% of O.R. managers

believe smoke evacuation will soon be mandated⁴



85% of all procedures

use electrocautery and O.R. team members
spend their days breathing its smoke⁵



Triple threat

Surgical smoke has been shown to be
cytotoxic, genotoxic and mutagenic^{6, 7, 8}



93% of nurses

feel more comfortable with a smoke evacuator
in the O.R.¹⁰

Not scrubbed? Still not safe.

Surgical smoke affects
everyone, even non-
scrubbed O.R. staff^{5,9}

“Expense, convenience and apathy are unacceptable impediments when the health and safety of perioperative personnel may be compromised without these devices...available evidence indicates that it is time to mandate the use of smoke evacuation systems in every O.R.”

AORN Literature Review¹¹

Better solution. Better air.

Your wellbeing matters. By helping you reduce surgical smoke hazards, we aim to create a better O.R. workplace and experience for you, while also helping you comply with various surgical smoke and workplace safety recommendations. **To learn more, or for a “hands on” demo, please call your Surgical sales representative or 800 253 3210. You may also learn more at neptunewastemanagement.com/SafeAir.**

U.S. part number	Product description
SafeAir Telescopic Smoke Evacuation Pencil – push button	
0703-046-004	Integrated telescopic smoke evacuation pencil; coated 70mm blade; push button switch
0703-046-005	Integrated telescopic smoke evacuation pencil; uncoated 70mm blade; push button switch
0703-046-006	Integrated telescopic smoke evacuation pencil; coated 70mm blade; push button switch, non-sterile*
0703-046-007	Integrated telescopic smoke evacuation pencil; uncoated 70mm blade; push button switch, non-sterile*
SafeAir Telescopic Smoke Evacuation Pencil – rocker switch	
0703-047-004	Integrated telescopic smoke evacuation pencil; coated 70mm blade; rocker switch
0703-047-005	Integrated telescopic smoke evacuation pencil; uncoated 70mm blade; rocker switch
0703-047-006	Integrated telescopic smoke evacuation pencil; coated 70mm blade; rocker switch, non-sterile*
0703-047-007	Integrated telescopic smoke evacuation pencil; uncoated 70mm blade; rocker switch, non-sterile*
SafeAir electrodes	
Array of electrodes	Full listing available at: neptunewastemanagement.com/SafeAir
SafeAir Compact Smoke Evacuator	
0703-045-000	Compact smoke evacuator, stand alone
0703-040-000	ULPA filter, compact smoke evacuator
0703-045-100	Smoke tubing for canister/fluid trap
0703-045-001	Foot pedal, compact smoke evacuator

*Non-sterile options for procedure packs available through distributors

Surgical

This document is intended solely for the use of healthcare professionals. A surgeon must always rely on his or her own professional clinical judgment when deciding whether to use a particular product when treating a particular patient. We do not dispense medical advice and recommend that surgeons be trained in the use of any particular product before using it in surgery.

The information presented is intended to demonstrate Stryker’s products. A surgeon must always refer to the package insert, product label and/or instructions for use, including the instructions for cleaning and sterilization (if applicable), before using any of Stryker’s products. Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. Please contact your representative if you have questions about the availability of Stryker’s products in your area.

Stryker Corporation or its affiliates own, use, or have applied for the following trademarks or service marks: Colorado, Neptune, ProCare, SafeAir, SealShut and Stryker. All other trademarks are trademarks of their respective owners or holders. The absence of a product, feature, or service name, or logo from this list does not constitute a waiver of Stryker’s trademark or other intellectual property rights concerning that name or logo.

- Brandon H.J. et al. “Characterization and removal of electrosurgical smoke.” *Surgical Service Management* 3.3 (1997): 14-16.
- Horn, Martlie et al. “Traditional canister-based open waste management system versus closed system: hazardous exposure prevention and operating theatre staff satisfaction.” *Journal of Perioperative Nursing in Australia*. 28:1 (Autumn 2015):18-22.
- Outpatient Surgery Magazine Instapoll*. March 2018. Web. Accessed July 10, 2018 http://www.outpatientsurgery.net/_media/pop/instapoll-results
- Clinician survey, GLG Research, LiNA Medical, July 2012.
- Ball, K. “Management of Surgical Smoke in the Perioperative Setting.” *AORN Annual Conference Presentation*. Web. Accessed January 8, 2016.
- Pierce, J.S. et al. “Laser-Generated Air Contaminants from Medical Laser Applications: A State-of-the-Science Review of Exposure Characterization, Health Effects and Control.” *Journal of Occupational Environmental Hygiene*. (2011): 8.7: 447-66.
- Alp, E. et al. “Surgical Smoke and Infection Control.” *Journal of Hospital Infection*, January 2006. Web. Accessed March 3, 2016.
- Barrett, W.L. and Garber, S.M. “Surgical Smoke – A Review of the Literature.” *Business Briefing: Global Surgery* (2004).
- Ulmer, B. “The Hazards of Surgical Smoke.” *AORN Journal* 87.4 (2008): 721-738.
- Gerson Lehman Group (GLG), “PneumoClear Claims Research: Perioperative Nurse Study.” June, 2018
- Bigony, L. “Risks associated with exposure to surgical smoke plume: A review of the literature.” *AORN Journal* 86. 6 (2007): 1013 – 1020.
- Nicola JH, et al, “Speed of particles ejected from animal skin by CO2 laser pulses, measured by laser Doppler velocimetry,” *Physics in Medicine and Biology*, March 2002.
- National Institute of Occupational Safety & Health (NIOSH, part of CDC) NIOSH Hazard Control Alert HC11: “Control of Smoke from Laser/Electrosurgical Procedures.” (DHHS Publication #96-128), Sept. 1996.
- Association of Perioperative Registered Nurses (AORN), Position Statement on Surgical Smoke & Bio-Aerosols; and Recommended Practices for Electrosurgery (AORN; 2013:125-41), Laser Safety (AORN; 2013:143-56) and MIS (AORN; 2013:157-84) all appearing in Perioperative Standards and Recommended Practices. AORN Denver, CO. (2013).
- British Occupational Hygiene Society (BOHS) for worker health protection. Control of Substances Hazardous to Health Regulations (COSHH) Guidance Note 0906, June 2006.
- International Federation of Perioperative Nurses (IFPN), Guideline on Smoke Plume, July 2007.
- Hedley, Anthony. “Surgical smoke almost killed me.” *Outpatient Surgery Magazine*, February 2018, 33-39.
- 2017 AORN Guideline for Surgical Smoke Safety

Stryker
4100 East Milham Avenue
Kalamazoo, MI 49001 USA
t: 269 323 7700 f: 800 999 3811
toll free: 800 253 3210

stryker.com/surgical