Dear Valued Customer,

Recently, SAGES came out with several surgical response recommendations to the COVID-19 pandemic.1 One of the recommendations was that consideration be given to the possibility of viral contamination during open and laparoscopic surgery.2

When surgery is performed and an energy device is used, that energy device can create surgical smoke regardless of whether the procedure is open or laparoscopic. Surgical smoke is made up of 95% water vapor and 5% cellular debris in the form of particulate material, which is composed of chemicals, blood and tissue particles, viruses and bacteria. In a benchtop experiment, Schultz (2015)2 determined that live bacterial and viral particles can exist in surgical smoke with a blended electrosurgical current, but not with a CO2 laser or with pure coagulation electrosurgery. The use of a smoke evacuation device may help to mitigate this risk. Aerosolization of bacteria was effectively prevented using a commercially available smoke evacuation system. In addition, to help minimize the production of smoke, electrosurgery units should be equipped with a high-efficiency filter. The diligent use of a smoke evacuation system with a high-efficiency filter has been identified as a feasible and potentially useful way for surgical smoke to be reduced.

Laparoscopic surgery involves insufflation of CO2 gas into the peritoneal cavity producing a pneumoperitoneum. The carbon dioxide is typically insufflated into the peritoneal cavity at a rate of 10-20LPM (liters per minute) to a pressure of 10-20mmHg. The pneumoperitoneum is maintained by a constant gas flow of 0.2-0.4 LPM. During insufflation and surgery, aerosolized particles can be produced. While the aerosols are primarily contained during laparoscopic trocars and other minimally-invasive devices can leak CO2, the maximum leak rate for a trocar is 0.15 LPM, and up to 3 LPM when an articulated endoscopic stapler is used. With the release of pneumoperitoneum, surgical personnel may be at risk of exposure to aerosolized particles.3

The MEGADYNE™ Smoke Evacuator can remove 4 to 18 LPM in laparoscopic mode which should cover CO2 flow in laparoscopic cases and can aid with pneumoperitoneum release. Recently, SAGES came out with several surgical response recommendations to the COVID-19 pandemic.1 Dear Valued Customer,

Because a virus can be aerosolized in CO2, the use of devices to filter particles should be strongly considered. Ethicon supports this position and recommends the use of a smoke evacuator, such as the MEGADYNE™ Mega Vac PLUS Smoke Evacuator, while performing laparoscopy.

Smoke evacuation can capture the smoke generated at the surgical site and remove it to an area away from the surgical team. Coronavirus particles range from 60-140nm in diameter,7,8 and their dispersal is caused by CO2 flow during surgery. Smoke evacuation can capture the smoke generated at the surgical site and remove it to an area away from the surgical team. Coronavirus particles range from 60-140nm in diameter,7,8 and their dispersal is caused by CO2 flow during surgery. During open surgery it is recommended that a suction device, such as the MEGADYNE™ ULTRA VAC™Smoke Evacuation Pencil, be kept within 5cm of the surgical site for efficient removal of aerosolized particles.9 The suction device should remain activated until the surgical smoke is cleaned.

Currently, there is no data that suggests that COVID-19 virus is released during laparoscopy or open surgery. Given the potential risk with COVID-19, Ethicon supports the recommendations from SAGES to use a smoke evacuation system or other filter. The diligent use of a smoke evacuation system with a high-efficiency filter has been identified as a feasible and potentially useful way for surgical smoke to be reduced. Smoke evacuation can capture the smoke generated at the surgical site and remove it to an area away from the surgical team. Coronavirus particles range from 60-140nm in diameter7,8 and their dispersal is caused by CO2 flow during surgery. Smoke evacuation can capture the smoke generated at the surgical site and remove it to an area away from the surgical team. Coronavirus particles range from 60-140nm in diameter7,8 and their dispersal is caused by CO2 flow during surgery. Smoke evacuation can capture the smoke generated at the surgical site and remove it to an area away from the surgical team. Coronavirus particles range from 60-140nm in diameter7,8 and their dispersal is caused by CO2 flow during surgery.

In order to ensure the safest environment for our patients, physicians, nurses and all hospital staff Ethicon supports SAGES position and recommends that a smoke evacuator is used in laparoscopic and open cases, in addition to the strict use of appropriate personal protective equipment.

Please refer to the attached MEGADYNE™ Mega Vac and MINI VAC™ systems brochure or contact your local Ethicon representative with any further questions.

April 3, 2020

2 Ball K. Compliance with surgical smoke evacuation guidelines: implications for practice. ORNAC J.
3 Charcoal Filter
4 MEGADYNE™ MINI VAC™ Smoke Evacuator in open
5 MEGADYNE™ ULTRA VAC™ Smoke Evacuation Pencil
6 MEGADYNE™ ULTRA VAC™ Smoke Evacuation Pencil
7 MEGADYNE™ ULTRA VAC™ Smoke Evacuation Pencil
8 MEGADYNE™ ULTRA VAC™ Smoke Evacuation Pencil
9 MEGADYNE™ ULTRA VAC™ Smoke Evacuation Pencil
10 MEGADYNE™ ULTRA VAC™ Smoke Evacuation Pencil

For a current inventory of Ethicon S/S Surgical Instruments, please visit the S/S Surgical Instrument Section of the 2020 U.S. Ethicon Catalogue or contact your local Ethicon Sales Representative.

Ongoing concerns about endoscopic and laparoscopic surgical technique are the subject of ongoing research. Of particular interest are the potential risks for aerosolization and transmission of respiratory infections and of SARS-CoV-2. Although many of these concerns can be addressed through effective smoke evacuation techniques, current studies are focused on the development and validation of new techniques and technologies to further reduce aerosol generation. The potential for aerosolization of SARS-CoV-2 through surgical smoke evacuation systems remains an area of ongoing investigation. Further studies are needed to evaluate the effectiveness of current smoke evacuation systems in reducing the risk of aerosolization of SARS-CoV-2 and other respiratory infections in surgical settings.