



OVERVIEW AND FACT SHEET

Plasma Surgery

Plasma surgery is a new, clean, safe and precise surgical technique that uses plasma, a highly ionized gas to cut and coagulate tissue and bone.

Prior to plasma surgery-based technology, electrosurgery-based equipment was the standard used by surgeons. All types of electrosurgery-based equipment – including conventional, argon-enhanced or fluid-enhanced – cut and coagulate using electrical currents that flow through patients' bodies, placing patients at risk for burns, deep tissue damage caused by electric sparks, and even death from such complications.

Plasma surgery provides a higher standard of care than electrosurgery because it uses electrically-neutral plasma and avoids the use of external electric currents flowing through patients.

PlasmaJet®

PlasmaJet is the first and only real plasma surgery device in the world. It is easy to use and can be used in both open and laparoscopic surgical procedures.

Benefits

PlasmaJet offers distinct advantages to surgeons, which can be translated into clinical benefits for patients.

- The device uses a fine beam of pure plasma, rather than an electric current, to cut and coagulate tissue and bone, so it removes the risks of burns and deep tissue damage.
- Since the device is electrically neutral, PlasmaJet is safe to use close to electronic devices like pacemakers, defibrillators and metallic implants. The device can also be used safely near sensitive tissue and anatomical landmarks like facial or spinal nerves and eyelids.
- When applied to tissue, the high-energy beam of the PlasmaJet system rapidly creates a very thin and flexible coagulation layer, preventing bleeding and lymphatic oozing from occurring.
- No thermal diffusion occurs in surrounding tissue or fluids when the PlasmaJet is used, which minimizes the depth of tissue damage.
- The dynamic effect of the plasma flow removes liquid from the wound surface, offering surgeons visual access and control. The device avoids “floating eschars” and the ensuing risks of premature eschar detachment and re-bleeds.
- Absence of tissue contact eliminates risks associated with adhesion of tissue to the instrument.

How it Works

The PlasmaJet generates high energy in the form of pure plasma. Plasma is the fourth state of matter (after solid, liquid and gas) and the highly energized gas forming the plasma gives up its energy rapidly in the form of light that illuminates the surgical field, heat that coagulates the tissue surface, and kinetic energy - which can be harnessed to cut tissue with simultaneous coagulation. .

The high energy of plasma in the PlasmaJet system is generated by ionizing a low flow of inert, argon gas within the insulated body of the single-use hand piece. The gas is excited to a plasma state and emerges from the tip of the hand piece into a precise, pale blue jet stream.

PlasmaJet Components

The PlasmaJet system consists of a console, a service trolley and a range of single-use hand pieces for open and laparoscopic surgery. It can be mounted on standard operating room carts or ceiling fixtures.

The console features:

- Simple user commands on the front touch panel
- A clear color LCD screen with easy-to-read and comprehensive operating messages
- An integrated cooling system which cools the tip of the hand piece at all times
- A footswitch for laparoscopic hand pieces

The service trolley offers:

- Convenient and safe storage for the argon gas bottle
- A storage place for the footswitch

The handpiece range includes short and intermediate length handpieces for open surgery and longer 5mm diameter handpieces for laparoscopic applications. The PlasmaJet system has been cleared for marketing in the United States by the Food and Drug Administration (FDA).

Plasma Surgical

Plasma Surgical is a global company committed to advancing surgical technology that enhances the care and safety of patients during medical procedures. Founded in 2000, the company's most noteworthy advancement is the development of a clinical application in plasma surgery with the PlasmaJet. Plasma Surgical continues to work on advancing and further developing the unique applications of plasma surgery.

Plasma Surgical's executive team consists of highly-experienced professionals with proven backgrounds in the medical device industry, particularly in surgical equipment technology. Plasma Surgical's corporate headquarters is located in England as well as the manufacturing of the console. Sales and operations are located in the United States, with additional sales offices located in France. Research and development and handpiece manufacturing is located in Sweden.