

Our Technology. Your Health.

JIANGSU BONSS
MEDICAL TECHNOLOGY CO., LTD.

MFG Factory 1: Building #7, No. 898, China Medical City Avenue,
Hailing District, Taizhou City, 225316 Jiangsu P.R. China.
MFG Factory 2: F6, Building G21, North of Xinyang Road, East of Koutai Road,
China Medical City Zone, Taizhou, Jiangsu 225316, China.
Tel: 0086-0523-86813258
Fax: 0086-0523-86813258
sales@plasma-surgical.com
sales@bonss.com.cn

www.plasma-surgical.com
www.BONSS.com.cn

Information included herein is indicative only. Actual products you receive may differ.

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Bipolar Radio Frequency Plasma Surgical Electrodes
Radio Frequency Plasma Surgical Systems



CFDA

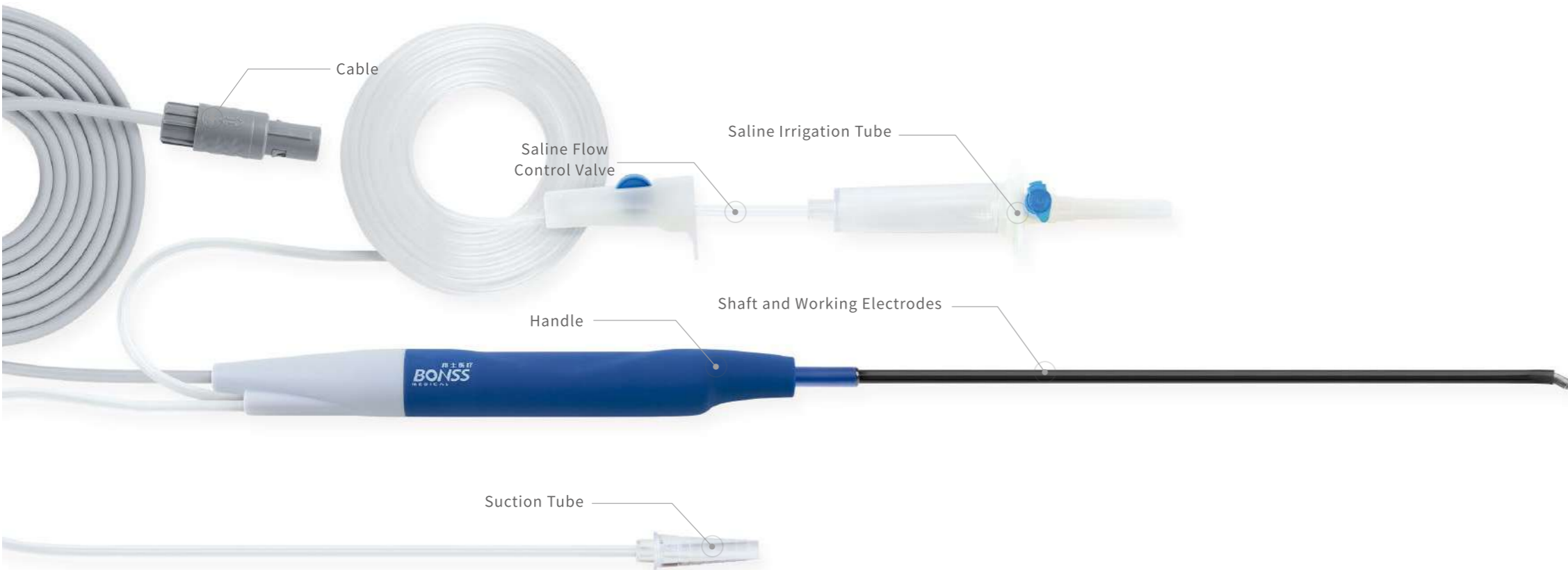


CE 0197



Radio Frequency Plasma Surgical Electrodes

The Minimally-Invasive Solution at Your Hand



- Bipolar and Multi-polar Technology
- Various bipolar and multipolar electrode designs are available.
- Rapid resection, ablation, coagulation and hemostasis of soft tissues.
- It provides resection, hemostasis, ablation, coagulation, irrigation and suction capabilities in one versatile single-use device.

Tonsil-Blator AC/BC/MC 401

Tonsillectomy, Adenoidectomy,
Uvulopalatoplasty



Tonsil-BlatorAD AC/BC/MC 401

Adenoidectomy, Tonsillectomy,
Uvulopalatoplasty



TurbinEX-C AC/BC/MC 304

Turbinate Reduction



PalatEX-C AC/BC/MC 305

Soft Palate Reduction, Tonsil Reduction, Uvula
Reduction, Tongue Base Reduction, CAUP



- Designed for precise soft tissue ablation and controlled hemostasis.
- Particular design to avoid the narrow surgical vision problem caused by small oropharyngeal cavity.

- Designed for controlled removal of laryngeal hypertrophy and tough tissues which are subject to benign or malignant pathological changes.
- The extended and small-diameter flexible shaft design makes it much easier for surgeons to access the target tissue for aggressive ablation while maintaining the optimal surgical vision.

Nasal Electrodes

Tonsil-BlatorPT AC/BC/MC 402

Procedure: Sinus Surgery, Pediatric Tonsillectomy, Adenoidectomy, Nasal Hyperplastic Tissue Reduction, Nasal Skull Base Tumor Removal.

Bi-Forceps AC/BC/MC 303

Bipolar Electrode for Hemostasis

Ear Electrodes

Oto-Blator AC/BC/MC 402

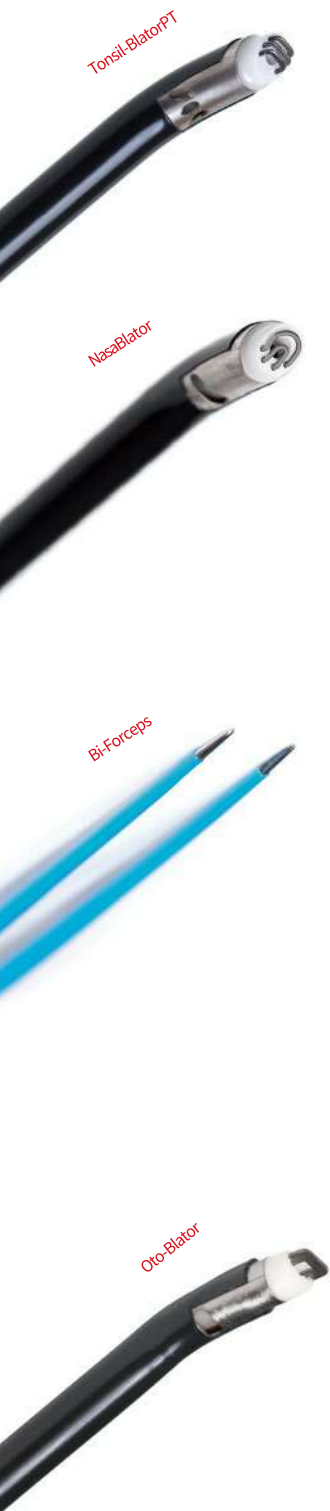
For ear endoscopic minimally-invasive surgeries

Laryngeal Electrodes

AC/BC/MC 303

Procedures: Laryngeal Lesion Debulking (Papillary Neoplasms, Cyst of Epiglottis, PDT, etc.)
Various designs available for different laryngeal surgeries.
Unique design available for children anatomical larynx structure.

*An Excellent Instrument for
Otolaryngology Head and Neck Surgeons*





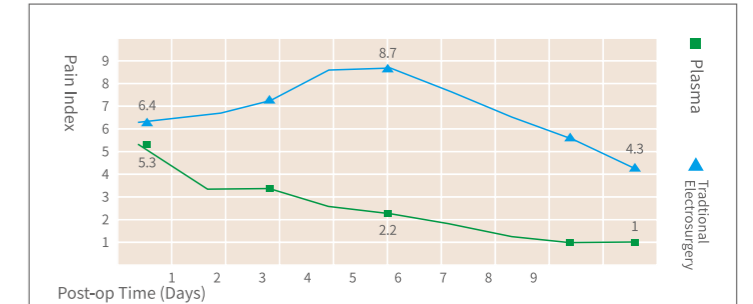
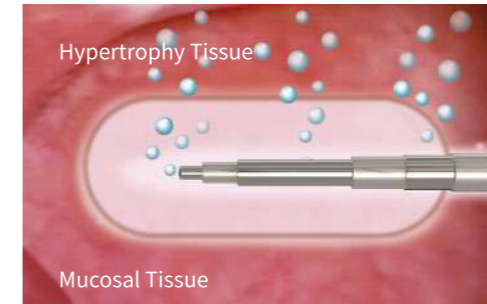
Advanced Surgical Method

Different from the traditional method, it only uses one single plasma electrode to complete the surgical process.

Reduced Patient Pain

Compared to that by conventional method of microwave or laser, the patient pain by plasma technology is reduced significantly. Normally the patient can resume oral intake in the same day after procedure.

Pain Study (P<0.001)



Less Blood Loss

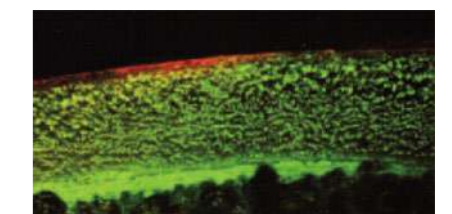
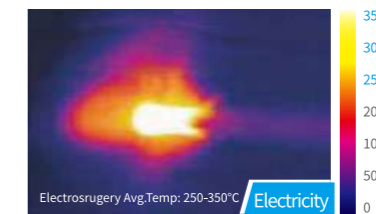
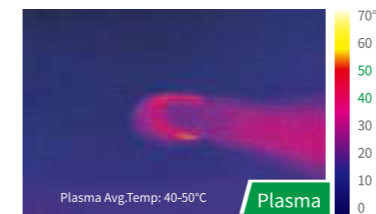
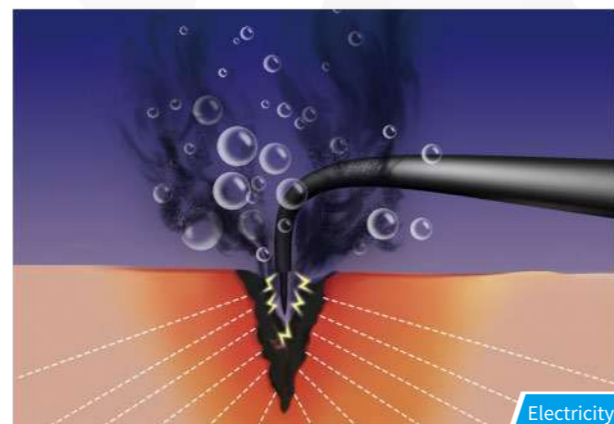
Excellent coagulation and hemostasis effect, even no blood loss in certain surgical process. Coagulation energy is adjustable. The blood loss of tonsillectomy by plasma technology can be controlled below 2ml while by traditional surgery the blood loss can reach 100ml.



Comparison of Plasma System and Traditional Electrosurgery System in Tonsillectomy

Low Working Temperature Less Thermal Damage

Based on integrated capabilities, saline flow control system and the temperature control technology of generator, the working temperature at the electrode tip can be controlled at 40-70°C, and energy penetration controlled within 100 microns.

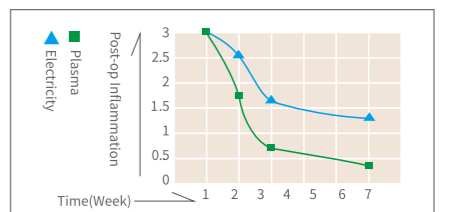
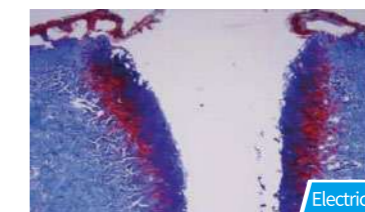
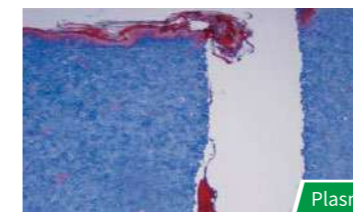


Infrared image of Plasma & Electricity

Less Thermal Damage By Plasma

Reduced Thermal Damage Fast Recovery

Reduced thermal damage to deep and healthy tissues, with fast post-operative recovery.



Comparison of Thermal Damage Between Plasma & Electricity

Comparison of Post-op Inflammation Degree By Plasma & Electricity

Surgical Wound by Plasma System

Surgical Wound by Electrosurgical System

Plasma Surgical System	Electrosurgical System
Generate Plasma Layer	Arc
Break Molecular Bonds	Cells Evaporation
40-70°C	300-600°C
Work in Saline Solution	Can't Work in Saline Solution
Bipolar	Monopolar
Thermal Damage of 1 mm	Thermal Damage of 3-5 mm
Not Carbonized	Carbonized

Plasma Surgical System VS Electrosurgical System

Plasma Surgical System	Cutting by Laser
Tissue Decomposition	Cells Evaporation
40-70°C	300-600°C
Less Thermal Damage	More Thermal Damage
Light Patient Pain	More Patient Pain

Plasma Surgical System VS Laser

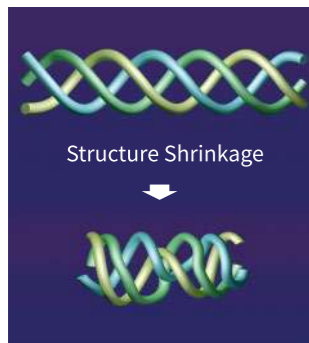
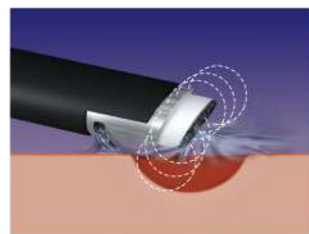
Shortened Hospital Stay Time

The hospital stay for patients treated by plasma technology can be shortened by 2-4 days, compared to that by conventional surgical methods.

ARS700 Radio Frequency Plasma Surgical System



How It Works



ABLATE

The Radio Frequency energy flows through active electrode and return electrode, and by the conductive saline solution it generates precisely focused plasma sheath around the electrodes. The plasma sheath consists of massive charged particles which can generate sufficient energy of strong oxidizing when accelerated by the electric field. The generated energy is powerful enough to break the organic molecular bonds within the tissue, and make the tissue rapidly dissolved into molecular and atoms level at a relatively low temperature of 40-70°C. The device provides rapid and efficient ablation and resection capabilities of soft tissues in a relatively low temperature.

COAGULATE

When RF energy acts on tissue (including blood), around the electrode tip it generates Joule heat and electromagnetic wave effect which providing an immediate coagulation of tissue protein and sealing of small blood vessels, thus coagulation and hemostasis capabilities of target tissues are realized. The surgical process by plasma ablation creates well-distributed coagulative necrosis for efficient hemostasis while preserving the mucosa and fibrous tissue. Compared to that of conventional surgical methods, its post-operative recovery is improved. Different from the traditional thermal coagulation by high temperature, plasma technology can make the working temperature controlled at 40-70°C, and coagulate helical structure of collagen molecules meanwhile preserving the cells vitality.

Excellent Performance



Systematic Working Mode

Two working modes: ABLATE for resection and ablation activated at Yellow control panel and Yellow foot pedal. COAG for coagulation and hemostasis activated at Blue control panel and Blue foot pedal.

Adjustable Coagulation Capability

Enhanced coagulation mode can improve hemostasis capability while providing clear surgical vision.

Intelligent Control System

Designed with automatic identification of electrodes, foot switch and power supply, which are displayed respectively on the device control panel, and automatic default power output value for different electrode designs.

Automatic Protection

The electrical circuit system can constantly monitor power output and automatically suspend power output when there is instantaneous peak current. For example, it will automatically suspend radio frequency output when electrode contacts or is close to metal, and automatically resumes work after electrode has returned to a proper distance.

Ablation with Endoscope

By the channel of nasopharyngolaryngoscope or bronchofiberscope, the electrodes can reach into deep position to perform ablation process. Low temperature avoids risk of smoke and carbonization, providing an innovative surgical solution for laryngeal disease.

Foot Switch

The water-proof, pressure-resistant and convenient foot switch has two working modes of ABLATE and COAG, each identified in different colors and working sounds.



Temperature Control Technology

The surgical process by plasma technology is performed at controlled 40-70°C. It uses a controlled, non-heat driven process in which bipolar radiofrequency (RF) energy excites the electrolytes in a conductive medium, usually saline solution, to create a precisely focused and charged plasma gas. The energized particles in the plasma have sufficient energy to break the organic molecular bonds within tissue, causing tissue to dissolve at relatively low temperatures of 40-70°C. Radiofrequency current does not pass directly through tissues, causing minimal tissue thermal effect. By temperature control technology, it automatically optimizes output value according to the plasma layer status around the electrode tip and the target tissue feature, by which electrode can provide a stable and efficient capabilities while keeping the lowest working temperature.

Saline Flow Control Unit

The Saline Flow Control Unit runs synchronously with the generator. It can be turned on or off automatically when the generator is activated or stopped, to ensure sufficient saline for surgical process.

Integrated Function

In one versatile single-use electrode, it provides ABLATE for resection and ablation, COAG for coagulation and hemostasis, irrigation and suction capabilities. The integrated suction electrode enhances surgical vision, controlled resection for rapid removal of soft tissues.