Our Technology, Your Health.

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SPINE

Bipolar Radio Frequency Plasma Surgical Electrodes

Radio Frequency Plasma Surgical Systems

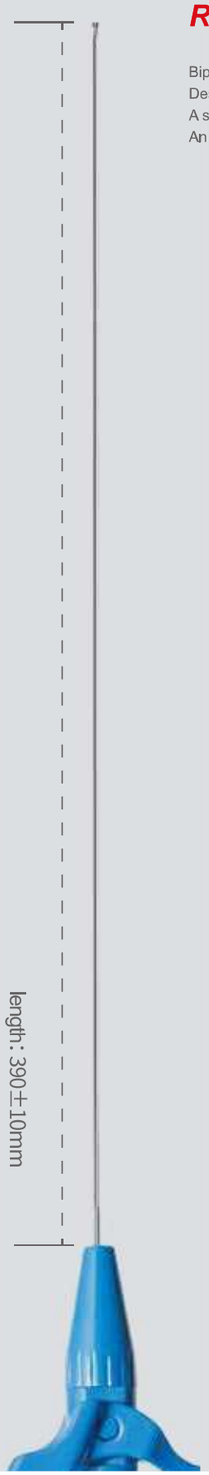
NMPA CE 0197 TÜVRheinland

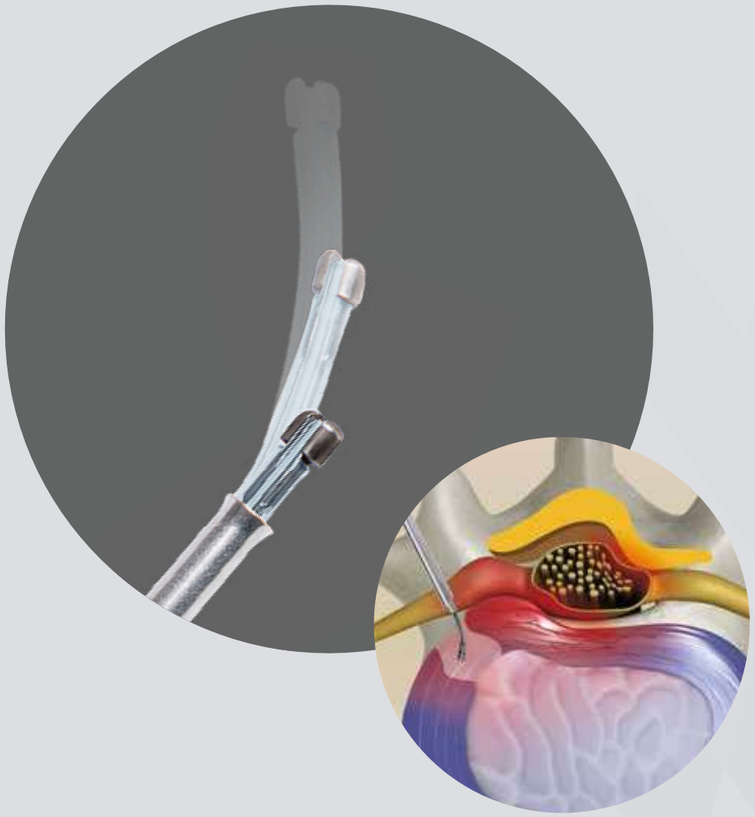
BONSS® MEDICAL

Uniportal Endoscopic Spine Surgery

RF Plasma Ablation Electrode

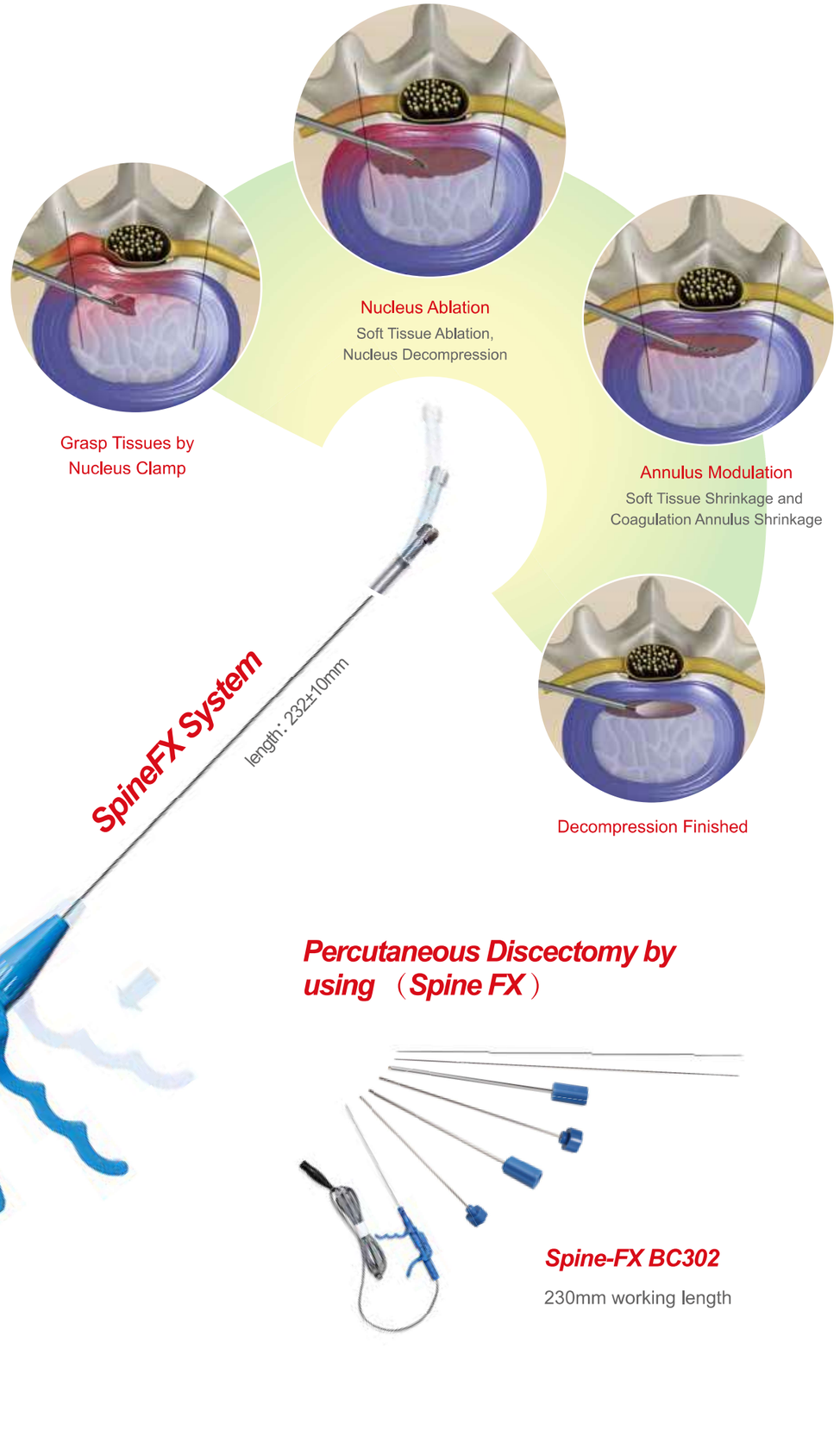
Bipolar RF Ablation Electrode provides an innovative and effective surgical effect with excellent clinical outcome.
Designed for contained disc herniations disectomies.
A surgical procedure of safe, rapid and effective performances.
An innovative and minimally-invasive surgical solution for discogenic diseases.





Spine-o-Flex

For spine endoscopic surgery
Compatible with different spine scopes
Compatible with different scope size



Percutaneous Discectomy by using （Spine FX）

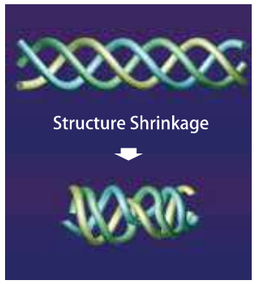
Spine-FX BC302

230mm working length

ARS600 Radio Frequency Plasma Surgical System

NMPA CE 0197 TÜVRheinland

How It works



The Surgical System adopts unique technology of controlling radio frequency emitting, whose power output can exactly produce plasma energy. Optimized power output can produce plasma energy effectively and speedily while minimize the thermal energy in the joints.

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.

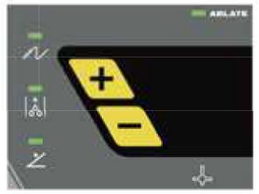
COAGULATE

When RF energy acts on tissue (including blood), around the electrode tip it generates Joule heat and electromagnetic wave effect which provide 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 past 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 Switch.
COAG for coagulation and hemostasis activated at Blue control panel and Blue Switch.

Enhanced Coagulation

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

Intelligent Control System

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

Automatic Protection

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

Bipolar and Multi-polar Technology

Various bipolar and multipolar electrode designs are available.
Around the electrode tip, sufficient and stable plasma layer is generated for rapid resection, ablation, coagulation and hemostasis of soft tissues.

Foot Switch

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

Integrated Function

In one versatile single-use electrode, it provides ABLATE for resection and ablation, and COAG for coagulation and hemostasis.

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.

Timer

When the special electrode with time control is selected, the generator automatically recognize the electrode and start to count the active time by 100ms.