A Revolution in Transurethral Treatment Concepts

Bipolar Treatment Concepts from KARL STORZ
Bipolar Treatment Methods

Bipolar Standard TURP

e.g. prostate 30-80 ml
standard procedure for prostate resection

Bipolar En-Bloc Resection

Product range expanded to include new electrodes
Bipolar Enucleation

e.g. prostate > 80 ml
comparable efficiency to laser enucleation

Bipolar Vaporization

e.g. prostate < 30 ml
cost-effective alternative to laser vaporization
Bipolar Treatment Methods from KARL STORZ

Although technical progress has been made in recent years in the various non-ablative treatment options, transurethral resection (TUR) remains the gold standard in the treatment of benign prostatic syndrome (BPS) and in the resection of bladder tumors. While unipolar resection can still be regarded as the standard in TUR, bipolar treatment techniques have also been developed in recent years.

Real bipolar system:
Current not returned via the sheath

Controlled current flow:
Reduced obturator nerve stimulation compared to unipolar TURP

Diverse electrodes:
Dedicated loops for various indications

Excellent initial cut:
Due to automatic HF current regulation

Self-cleaning electrodes:
Removal of tissue due to plasma formation

Use of saline solution:
Reduced risk of TUR syndrome compared to unipolar TURP; more time for resection, coagulation and training without compromising safety

Additional techniques:
Bipolar enucleation and vaporization
A physician’s opinion on the bipolar vapo-enucleation electrode

The combination of a vaporization electrode and a mechanical dissection probe with a flat cuneiform design allows detachment of the inner prostate gland (TI) from the outer gland (surgical capsule) through axial advancement of the electrode via the working element. This reduces the necessary mechanical stress on the urethra, which is particularly useful during laser enucleation. Detachment of the interior prostate gland by means of mechanical ablation allows anatomically correct dissection under visual control. The excellent coagulation and vaporization properties of the electrode ensure good hemostasis and precise dissection in areas with adhesions between the interior and exterior prostate glands. In areas that require dissection, e.g., anterior fibromuscular stroma, the excellent vaporization properties of the electrode permit convenient smoothing of the wound base. Thanks to its mechanical stability, the probe can be used on medium-sized adenomas up to five times without compromising effectiveness according to my experience.

Conclusion
Based on my own experience during the development phase, the new electrode for bipolar vapo-enucleation is a convenient multi-use probe for the anatomical enucleation of the prostate. After performing 2000 AEEP procedures (anatomical endoscopic enucleation of the prostate) using both laser enucleation (HoLEP, ThuLEP) and bipolar techniques, I see no significant difference as regards the effectiveness of these techniques. Thanks to the convenient layer-by-layer dissection and effective hemostasis, the probe has proven to be a suitable and reliable tool for learning and teaching the AEEP procedure with a manageable number of participants. With BipoIEP, the bipolar current is used for dissection (cutting) and coagulation analogous to laser techniques. In my opinion, the new vapo-enucleation electrode has the potential to provide a global response to the trend towards transurethral, cost-effective enucleation.

Prof. Dr. med. Thomas R. W. Herrmann, Klinik für Urologie, Spital Thurgau AG, Switzerland
Development partner for KARL STORZ SE & Co. KG for the bipolar VapoEnucleation Electrode (27040VE)
Physician Opinions on the Bipolar Resectoscope System

Everyone agrees that the initial cut in TURP corresponds to that in monopolar resection, and the loop remains free of tissue remnants thanks to the arc created by the loop in the bipolar ionized medium (quasi-plasma). As a result, the resection characteristics of the bipolar system are even better in some respects. In bladder resection, this is particularly noticeable and important for the histological preparations. Even the smallest biopsies can be precisely harvested without coagulation of the resected tissue, which is common in monopolar resection.

In addition to this advantage, all resections are performed in isotonic NaCl solution, thereby eliminating the risk of TUR syndrome, the risk of complications resulting from unexpected obturator reflex is much reduced, and patients with pacemakers can be treated without disabling the device. Together, these advantages render this system the ideal resection system with extensive safety buffer, which is desirable in the training of residents as well as in daily clinical practice.

Conclusion
While previous experiences with other bipolar resection systems (old bipolar system [KARL STORZ], TuRis [Olympus], Gryus [ACMI]) did not convince us to change our resection approach, the new KARL STORZ bipolar system features such impressive intraoperative handling and cutting and coagulation behavior that bipolar resection has become our standard procedure for specialists and senior physicians as well as in the training of residents and fellows.

Prof. Dr. med. Thomas R. W. Herrmann, Klinik für Urologie, Spital Thurgau AG, Switzerland

In bipolar TURB, the sharp cuts prevent tissue retraction. With the hook electrode, bladder tumors can be easily turned and completely removed together with the bladder wall (better staging).

In Bipolar TURP, even for large prostates, no carbonization was observed. In addition, the resectoscope does not need to be removed to clean the loop, which saves time. Bipolar techniques result in better quality tissue samples because they are free of extensive coagulation or burnt edges, thereby enabling easier and more precise staging of superficial bladder tumors. In bipolar systems, we observed less bleeding, fewer clots, and, as a result, better viewing conditions.

Conclusion
No learning curve, shorter operating time, less expensive irrigation solutions, reduced medical risk, and the possibility of treating patients on anticoagulants are only a few of the advantages of using bipolar TUR in all TUR procedures. Bipolar instruments ideally complement monopolar resectoscopes.

Prof. Pierre Conort, Department of Urology and Renal Transplantation, Groupe Hospitalier Pitié-Salpêtrière, Paris
Bipolar Resectoscope System from KARL STORZ – Real Bipolar!

A bipolar resectoscope system consists of two electrodes, isolated from each other, connected to the same support and close together, so constructed that, when energized, the HF current flows mainly between these electrodes. The system is supported by the KARL STORZ HF Generator AUTOCON® III 400. The performance of bipolar applications has thus been further enhanced and optimized.

Real Bipolar System

Active and return electrodes are totally insulated against all conductive components of the resectoscope and therefore also primarily insulated against the urethra.

Convenient and Economical

To convert an existing unipolar resectoscope system to a bipolar system, just exchange the working element, the respective loop and the connecting cable. Sheath, telescope and HF generator can be retained.

HF Generator AUTOCON® III 400

- Automatic current regulation
- Ultimate user comfort:
  High-resolution touch display, automatic mode selection according to respective connecting cable (unipolar/bipolar resection), individual procedure programming
The wide range of electrodes for the bipolar resectoscopes from KARL STORZ allows individual instrument configurations tailored to the operative situation as well as to the surgeon's personal preferences. The KARL STORZ product portfolio includes loops for resection, incision, en-bloc resection as well as vaporization and enucleation electrodes for the prostate, bladder and urethra.

### Bipolar Resection and En-bloc

- Wide range of electrodes for prostate and bladder resection
- Automatic power regulation
- Self-cleaning loops due to plasma effect
- Reusable

### Bipolar Enucleation

- Economical solution for enucleation of the prostate
- Efficiency comparable to Laser enucleation
- Convenient addition to your treatment portfolio
- UNIDRIVE® S III and S-PILOT® – your combination for morcellation: The S-PILOT® vacuum control unit offers the choice between using the KARL STORZ vacuum pump or the central suction system

### Bipolar Vaporization

- Special design of the active electrode enables vaporization
- Bifunctional for vaporization and coagulation
- Cost-effective alternative to greenlight Laser therapy
KARL STORZ Bipolar Resectoscope

HOPKINS® Forward-Oblique Telescope 30°, enlarged view, diameter 4 mm, length 30 cm, autoclavable, fiber optic light transmission incorporated, color code: red

HOPKINS® Telescope 12°, enlarged view, diameter 4 mm, length 30 cm, autoclavable, fiber optic light transmission incorporated, color code: black

Motion by means of a spring
Movable thumb ring
In rest position the electrode is inside the sheath.

Working Element, bipolar
including:
- Working Element
- 2x Cutting Loops, bipolar
- 2x Coagulation Electrodes, bipolar
- High Frequency Cord
- Protection Tube

Motion by means of a finger grip
Movable thumb ring
In rest position, the electrode is outside the sheath.

Working Element, bipolar
including:
- Working Element
- 2x Cutting Loops, bipolar
- 2x Coagulation Electrodes, bipolar
- High Frequency Cord
- Protection Tube
27050SCK  **Resectoscope Sheath, quick-release lock**, including connecting tube for in- and outflow, 26 Fr., oblique beak, **rotating** inner sheath with ceramic insulation, color code: yellow

27050LC  **Adaptor**, for use with bladder syringes in outer sheaths of Resectoscopes 27050SC, 27050SD and 27054SC

27040BOK  **Resectoscope Sheath, with LUYER-Lock stopcock and obturator**, including connecting tube for inflow, 24 Fr., oblique beak, Obturator 27040OC included in delivery, color code: yellow

27241BOK  **Resectoscope Sheath, with central valve and obturator**, including connecting tube for in- and outflow, 24 Fr., oblique beak, Obturator 27040OC included in delivery, color code: yellow

27040OC  **Standard Obturator**, for 24/26 Fr. sheaths, 27050SCK, 27040BOK, 27241BOK, color code: yellow
Electrodes

Two-Stem Electrodes with Stabilizers, for Working Elements 27040DB, 27040EB

For use with 24/26 Fr. resectoscope sheaths
The cutting loops are delivered with a wire diameter of 0.35 mm. Loops with 30 or 40 as the last digit of the order number indicate a wire diameter of 0.30 mm or 0.40 mm.

Cutting Loops

<table>
<thead>
<tr>
<th>Distal Tip</th>
<th>24/26 Fr. color code: yellow</th>
<th>Instrument Description</th>
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</thead>
<tbody>
<tr>
<td>27040GP1</td>
<td>Yellow</td>
<td>Cutting Loop, bipolar</td>
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<tr>
<td>27040GP140</td>
<td>Yellow/orange</td>
<td>Cutting Loop, bipolar</td>
</tr>
<tr>
<td>27040GD1</td>
<td>Yellow/orange</td>
<td>Cutting Loop, bipolar, small</td>
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<tr>
<td>27040BL1</td>
<td>Yellow/orange</td>
<td>Cutting Loop, bipolar, pointed</td>
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Cutting Loops

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<th>Distal Tip</th>
<th>24/26 Fr. color code: yellow/orange</th>
<th>Instrument Description</th>
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<tr>
<td>27040GP130</td>
<td>Yellow/orange</td>
<td>Cutting Loop, bipolar, diameter 0.30 mm</td>
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<td>27040JB1</td>
<td>Yellow/orange</td>
<td>Cutting Loop, bipolar, longitudinal</td>
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<tr>
<td>27040JB130</td>
<td>Yellow/orange</td>
<td>Cutting Loop, bipolar, longitudinal, diameter 0.30 mm</td>
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<tr>
<td>27040JBE130</td>
<td>Yellow/orange</td>
<td>Cutting Loop, bipolar, rectangular, longitudinal, diameter 0.30 mm</td>
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VapoEnucleation Electrode

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<th>Instrument Description</th>
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<tr>
<td>27040VE</td>
<td>Yellow</td>
<td>VapoEnucleation Electrode, bipolar, hemispherical</td>
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Vaporization Electrodes

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<th>Instrument Description</th>
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<tr>
<td>UH801</td>
<td>Bipolar High Frequency Cord, length 400 cm, for KARL STORZ AUTOCON® III 400 SCB, for use with KARL STORZ bipolar resectoscopes</td>
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280 Protection Tube, for sterilization and storage of electrodes, loops, curettes and knives

**AUTOCON® III 400**

High Frequency Surgical Unit

<table>
<thead>
<tr>
<th>UH400</th>
<th>AUTOCON® III 400 High-End, without CE certification, power supply 220-240 VAC, 50/60 Hz, including mains cord</th>
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<tr>
<td>UH400U</td>
<td>AUTOCON® III 400 High-End, without CE certification, power supply 100-127 VAC, 50/60 Hz, including mains cord</td>
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<tr>
<td>UH400E</td>
<td>AUTOCON® III 400 High-End, with CE certification, power supply 220-240 VAC, 50/60 Hz, including mains cord</td>
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<tr>
<td>UH400UE</td>
<td>AUTOCON® III 400 High-End, with CE certification, power supply 100-127 VAC, 50/60 Hz, including mains cord</td>
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Morcellator System for Urology
Handpiece 27702050, for use with UNIDRIVE® S III SCB

27702050 DRILL-CUT-X® II Morcellator Handpiece URO, for use with UNIDRIVE® S III SCB

40712090 Handle, adjustable, for use with DRILL-CUT-X® II N Shaver Handpiece

41250RA Cleaning Adaptor, Luer-Lock, for cleaning DRILL-CUT-X®/DRILL-CUT-X® II handpieces

For use with DRILL-CUT-X® II Morcellator Handpiece URO

27056LM Morcellator Blade, straight, sterilizable, drop-shaped cutting window, outer window serrated, inner window double fenestrated and serrated, diameter 4 mm, length 40 cm, for use with DRILL-CUT-X® II Morcellator Handpiece URO 27702050

41200RA Cleaning Adaptor, Luer-Lock, for cleaning the inner and outer blades of DRILL-CUT-X® accessories
Morcellator System for Urology
UNIDRIVE® S III SCB, for use with DRILLCUT-X® II
Morcellator Handpiece URO 27702050

Specifications

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<tr>
<th>Operation mode</th>
<th>oscillating (morcellator)</th>
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<tbody>
<tr>
<td>Max. rpm</td>
<td>40,000 (rpm)</td>
</tr>
<tr>
<td></td>
<td>Blade 500-5000 (rpm)</td>
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<tr>
<td>Power supply</td>
<td>100-120/230-240 VAC, 50/60 Hz</td>
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<tr>
<th>Dimensions w x h x d</th>
<th>305 x 165 x 233 mm</th>
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<tr>
<td>Weight</td>
<td>4 kg</td>
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<tr>
<td>Certified to</td>
<td>IEC 601-1, CE acc. to MDD</td>
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Morcellator System for Urology
S-PILOT®

UP501S2  S-PILOT® Set, incl. control cable
including:
Connecting Cable
Tubing Set Suction, sterile, for single use,
package of 10

031457-10  Tubing Set Suction, sterile, for single use,
package of 10, for use with S-PILOT®
Morcellator System for Urology
KARL STORZ UNIMAT® 30 in Urology

25320001  UNIMAT® 30, Suction Pump Set,
power supply 230 VAC, 50/60 Hz
including:
Bacterial Filter
Secretion Bottle
Bottle Cap
Connecting Tube, short
Patient Tube
Overflow Case
Mains Cord

25320001C  Same, power supply 115 VAC, 50/60 Hz

Further product information is available in the UROLOGY catalog.

It is recommended to check the suitability of the product for the intended procedure prior to use.
Please note that the described products in this medium may not be available yet in all countries due to different regulatory requirements.