

# D-PORT

A new reusable platform for transanal laparoscopic surgery



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Surgery of the Rectum can be performed by Laparotomy, Conventional Multi-Trocar Laparoscopy, Single-Incision Laparoscopy and TransAnal Laparoscopy.

TransAnal Laparoscopy is realized with the introduction of the port-device and laparoscopic instruments through the anus.

Benign lesions as well as early malignant lesions of the rectum with an endoluminal location can be removed. The resected lesions can be located in the low, middle and high rectum.

The resection of the rectum with the total mesorectal excision (TME) can be performed transanally, going from the anus cephalad into the abdomen. The specimen is finally removed from the anus, avoiding any mini-laparotomy into the abdomen and the anastomosis is performed from down-to-up.

TransAnal Laparoscopy can also be applied to solve some complications after resection of the rectum. Perioperative leak and bleeding, early postoperative leak and bleeding and also late colorectal fistula can be treated through the anus with endoluminal suturing and healing of the defect.

All these TransAnal Surgeries need appropriate and dedicated operative platforms, consisting of transanal port-devices and laparoscopic instruments. Due to the unique anal entry, these laparoscopic instruments need a particular shape, offering the possibility to operate without any clashing of the instruments' tips and any conflict between the surgeons' hands.

A new and reusable port, named D-PORT, has been invented for the TransAnal Laparoscopy and a new platform for this surgery has been created.

*Giovanni Dapri, MD PhD  
Professor of Surgery*

## D-PORT

The TransAnal Port is reusable, permitting multiple use and reduction of the cost per procedure, due to the nature of the material adopted.

### The D-PORT is formed by three main parts:

#### Tube and Obturator:

DAPRI Operating Rectoscopy Tube, Ø 30 mm, length 7.5 cm, two LUER-Lock connectors for gas-insufflation and smoke evacuation.

This diameter has been chosen to facilitate the introduction of the D-PORT into the anal margin, without any type of anal dilatation. Furthermore, it has a diameter large enough to use a 10 mm scope and two 5 mm instruments, avoiding any type of conflict of instruments during dissection, resection and suturing.

The D-PORT permits both the insufflation of the CO<sub>2</sub> and the simultaneous evacuation of the smoke created by dissection. The port ring offers 4 oval holes, which permit the fixation of the D-PORT to the skin during the different steps of the procedure.

Finally, inside the tube the four cardinal points are marked, helping the surgeon with orientation during the dissection and suture.



#### Sealing Cap:

The DAPRI Sealing Cap is 1 cm thick, made of silicone, and has 3 instrument ports on the same horizontal line. The cap permits free movement of the instruments outside the tube.

The three orifices are 6 mm, 11 mm, 6 mm, and they are located in this order to permit the introduction of the 10 mm scope in the middle and the two ancillary 5 mm tools on both sides. This disposition permits one of the principles of conventional laparoscopy to be respected, which is the optical system in the center as the bisector of the working triangulation formed by two ancillary tools. Moreover, the central orifice of the sealing cap also allows the introduction of a linear stapler through a change of the 11 mm orifice into a 13 mm.



## TransAnal Platform

DAPRI D-PORT (Figures 1, 2)

Telescope: 10 mm, 30°, rigid and regular length (Figure 3)

DAPRI monocurved grasping forceps IV (Figure 4)

DAPRI monocurved coagulating hook (Figure 5)



DAPRI monocurved needle holder I (Figure 6)

DAPRI monocurved scissors (Figure 7)

DAPRI monocurved RoBi® grasping forceps (Figure 8)

DAPRI monocurved RoBi® scissors (Figure 9)

Monocurved suction and irrigation cannula (Figure 10)



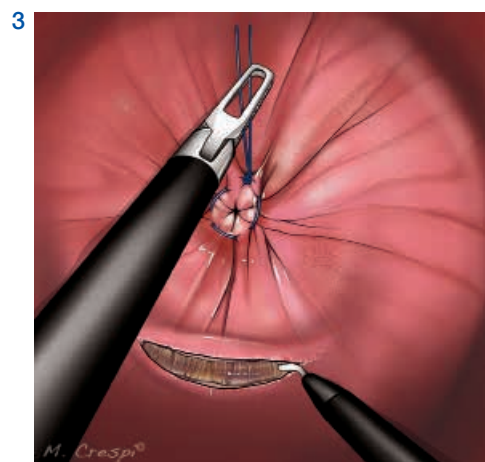
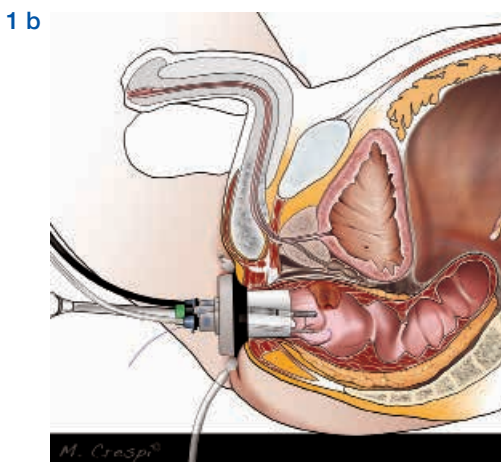
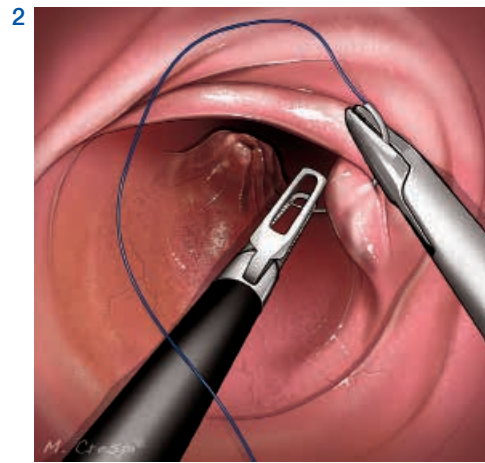
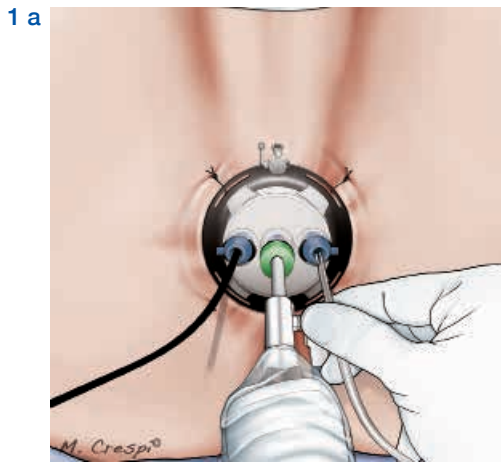
## Overview and Examples of Application

### Total Mesorectal Excision (TME) from Down-To-Up, with ColoRectal Anastomosis

**Fig. 1 a, b:** The D-PORT is introduced into the anus and fixed to the skin by 4 sutures. A 10 mm, 30°, rigid and regular length scope is used, besides the monocurved grasping forceps IV (introduced at 9 o'clock position), and the monocurved needle holder I (introduced at 3 o'clock position)

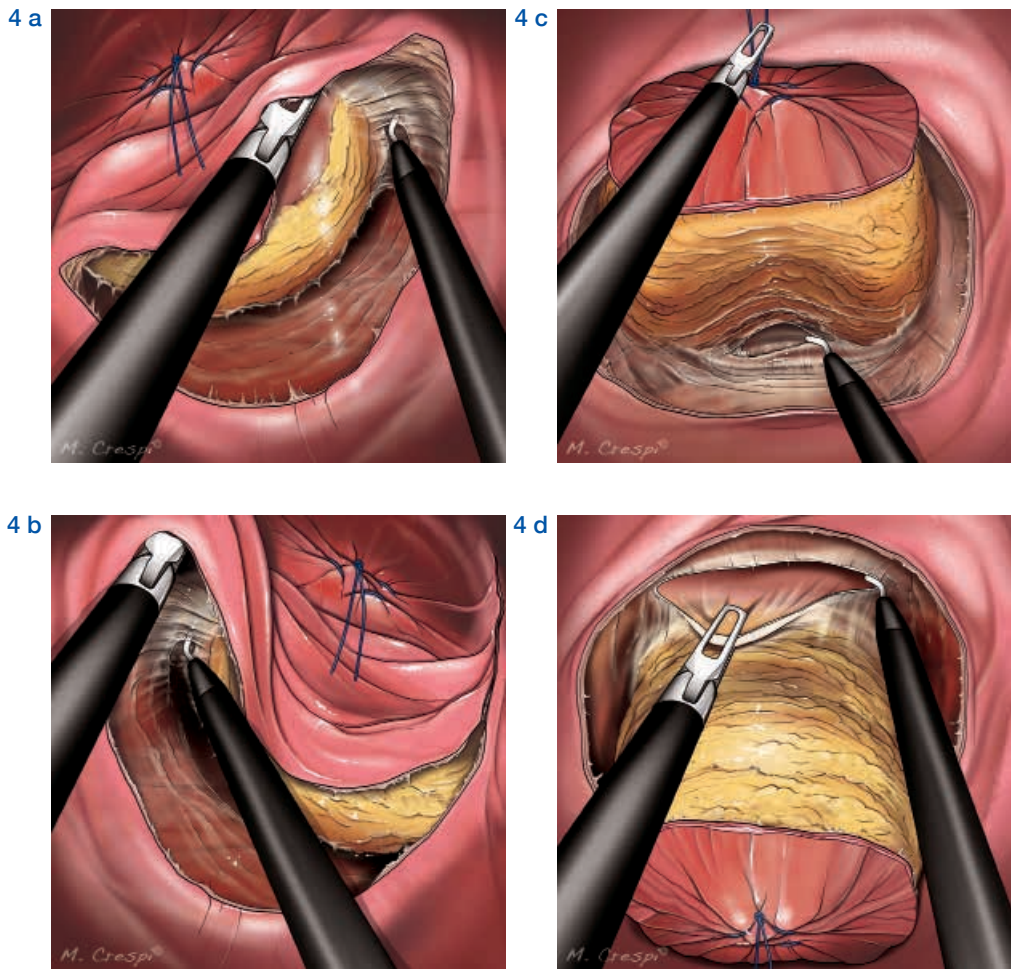
**Fig. 2:** An intraluminal suture is performed a few centimeters down the lesion

**Fig. 3:** The rectal wall is perforated in full thickness method, using the monocurved coagulating hook (introduced at the 3 o'clock position)

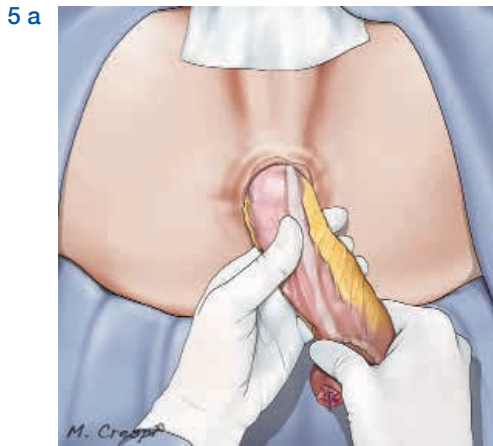




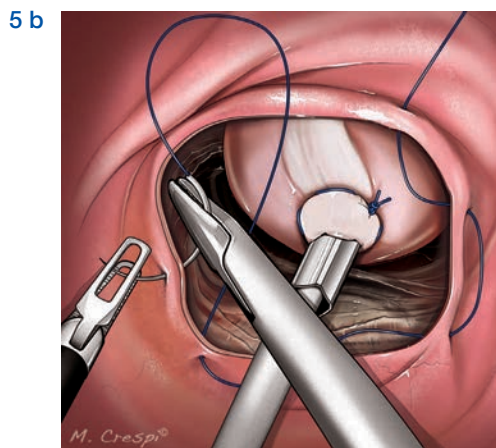
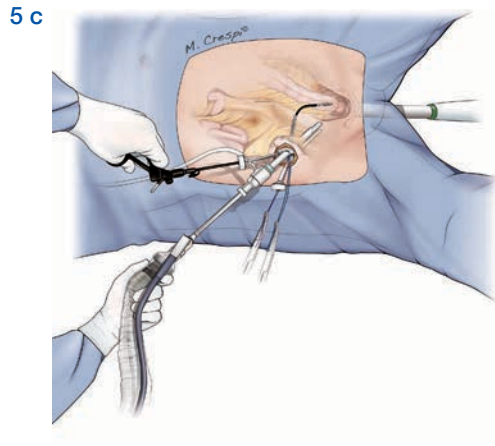
**Fig. 4 a, b, c, d:** The dissection is started posteriorly, respecting the presacral fascia, then laterally and finally anteriorly, respecting the prostate (male) or the vagina (female), joining the abdominal cavity at the end



**Fig. 5 a, b:** The specimen is removed transanally; the anvil of the stapler is introduced and pushed into the pelvis



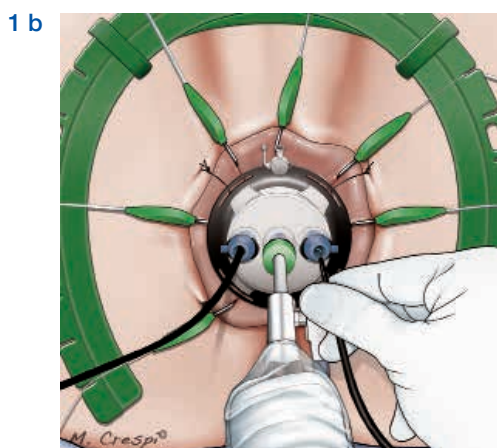
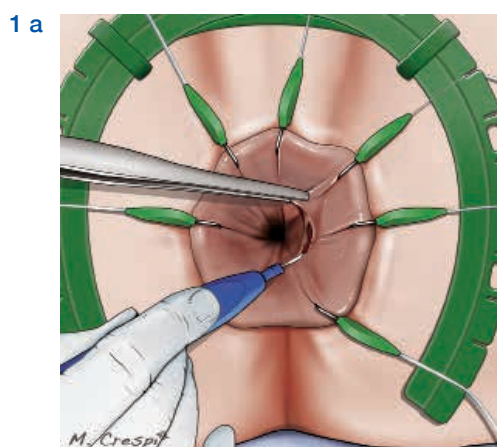
**Fig. 5 b, c:** The rectal stump opening is closed by a purse-string suture, and the colorectal anastomosis is performed under abdominal view



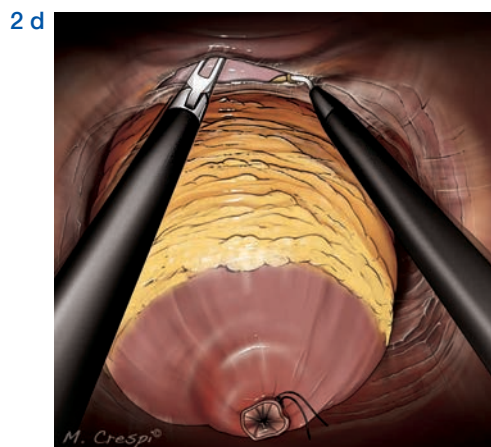
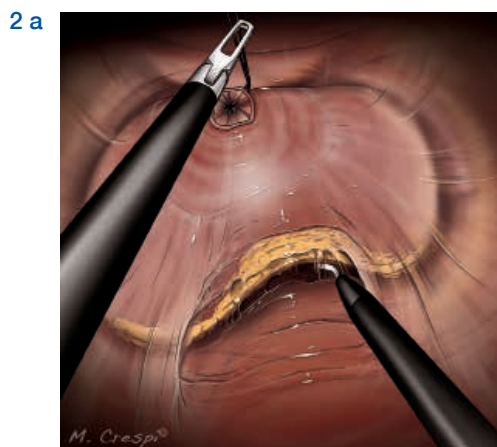
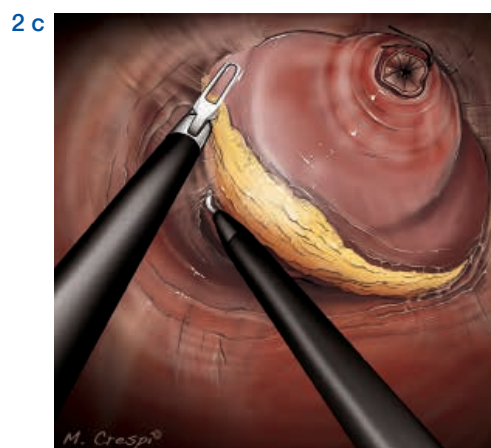
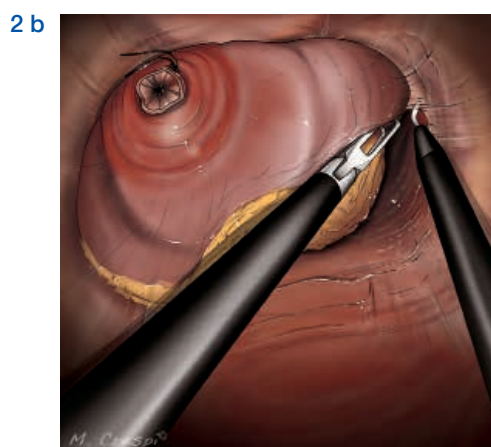


## Total Mesorectal Excision (TME) from Down-To-Up, with ColoAnal Anastomosis

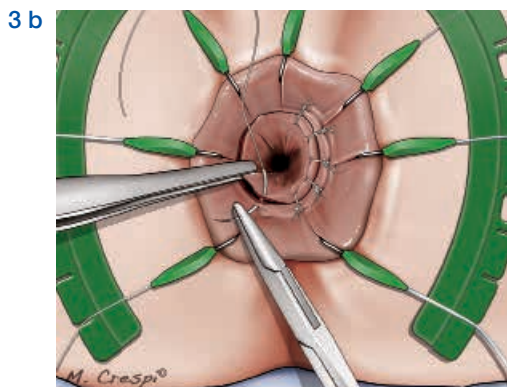
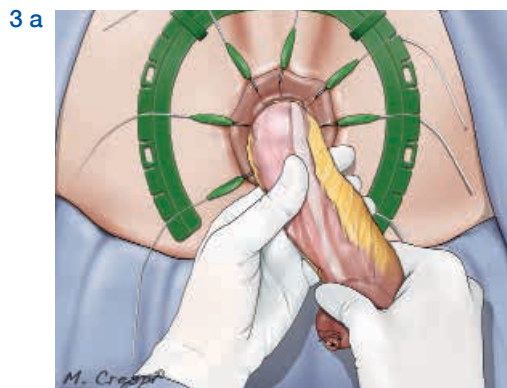
**Fig. 1 a, b:** The D-PORT, the scope, the monocurved grasping forceps IV, and the monocurved coagulating hook are introduced, after having incised the anal mucosa and closed the anal stump



**Fig. 2 a, b, c, d:** The TME is started posteriorly, respecting the presacral fascia, then laterally and finally anteriorly, respecting the prostate (male) or the vagina (female), joining the abdominal cavity at the end



**Fig. 3 a, b:** The specimen is removed transanally and the coloanal anastomosis is performed

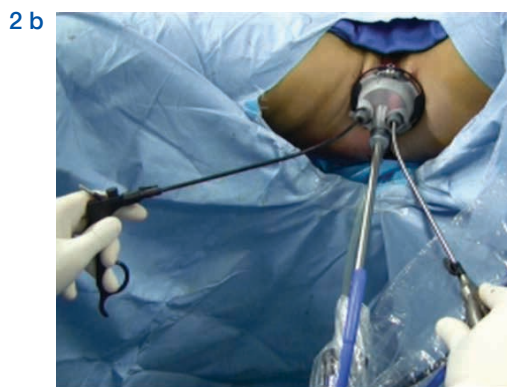
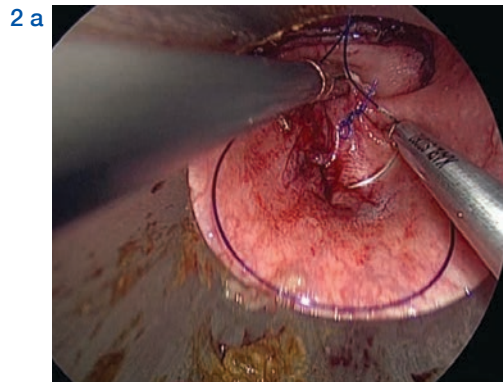
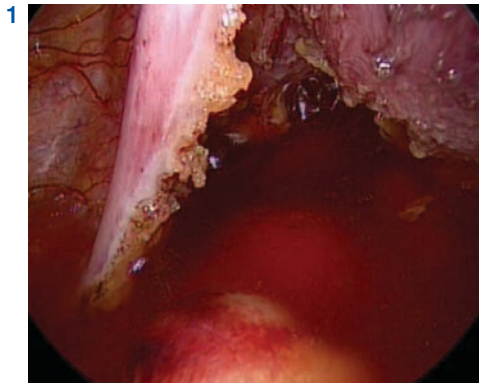


## TransAnal Repair of Immediate ColoRectal Leak after Laparoscopic Resection of the Rectum

**Fig. 1:** Abdominal laparoscopic evidence of colorectal leak into the pelvis (bubbles)

**Fig. 2 a:** Endoluminal suture

**Fig. 2 b:** Extracorporeal ergonomics for surgeons

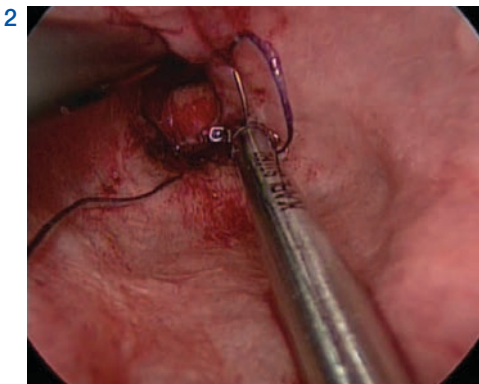
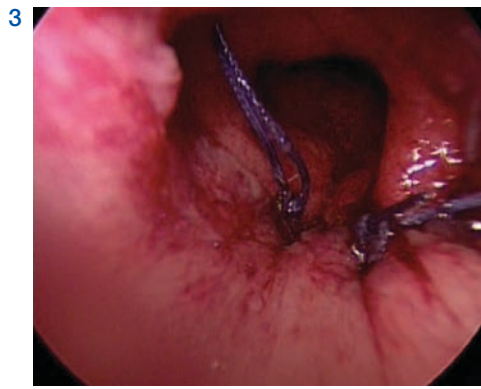
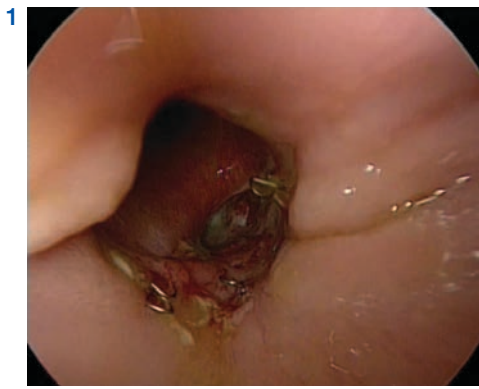


## TransAnal Repair of Late ColoRectal Fistula after Laparoscopic Resection of the Rectum

**Fig. 1:** Endoluminal exposure of the fistula orifice at the level of the circular mechanical colorectal anastomosis

**Fig. 2:** Endoluminal suture

**Fig. 3:** Final view





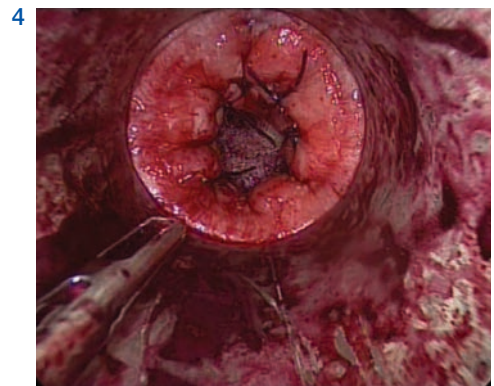
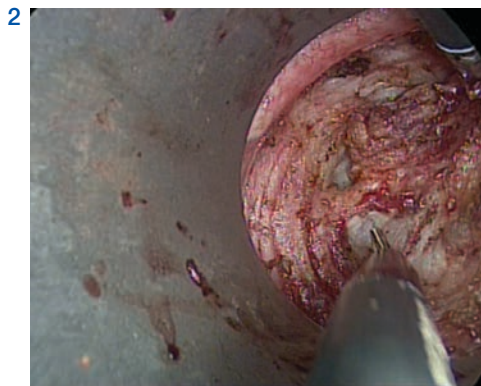
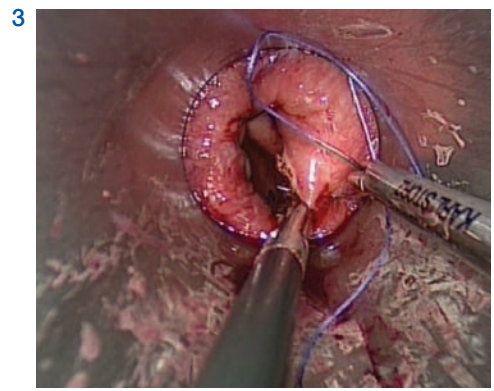
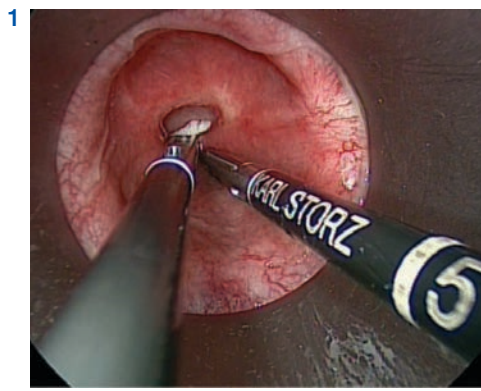
## TransAnal Mucosectomy

**Fig. 1:** Endoluminal exposure of the circular benign stenosis at 2.5 cm from the anal margin

**Fig. 2:** Mucosectomy performed by monocurved coagulating hook

**Fig. 3:** Endoluminal suture

**Fig. 4:** Final view



## TransAnal Platform



24944 TS **D-PORT, DAPRI** operating resectoscope system including:  
**DAPRI Operating Rectoscope Tube**  
**Obturator**  
**Seal**

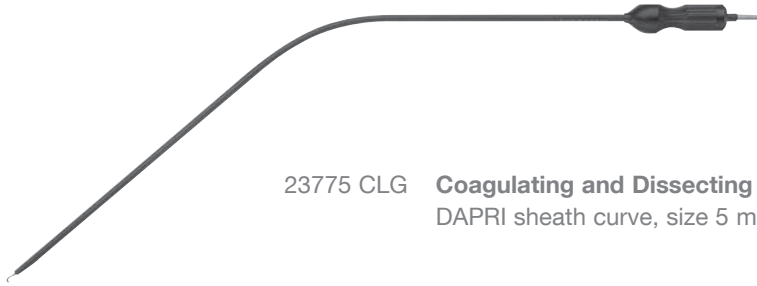


26003 BA **HOPKINS® Forward-Oblique Telescope 30°**, enlarged view, diameter 10 mm, length 31 cm, **autoclavable**, fiber optic light transmission incorporated, color code: red



23125 ONG **CLICKLINE Grasping Forceps**, with especially fine atraumatic serration, fenestrated, single action jaws, with connector pin for unipolar coagulation, DAPRI sheath curve, size 5 mm including:  
**Metal Handle**, insulated, without ratchet, with 4 locking positions  
**Outer Sheath**, with Working Insert

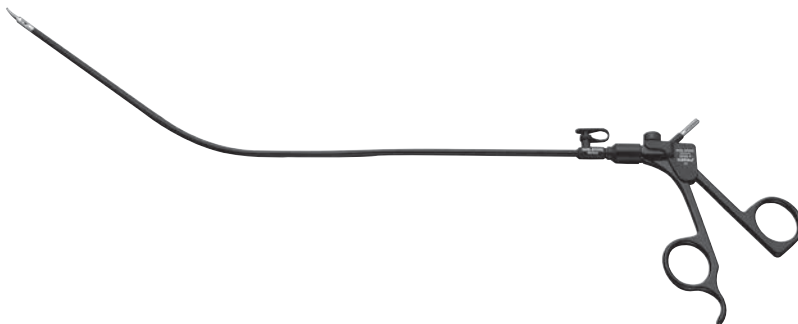




23775 CLG **Coagulating and Dissecting Electrode**, L-shaped tip, DAPRI sheath curve, size 5 mm



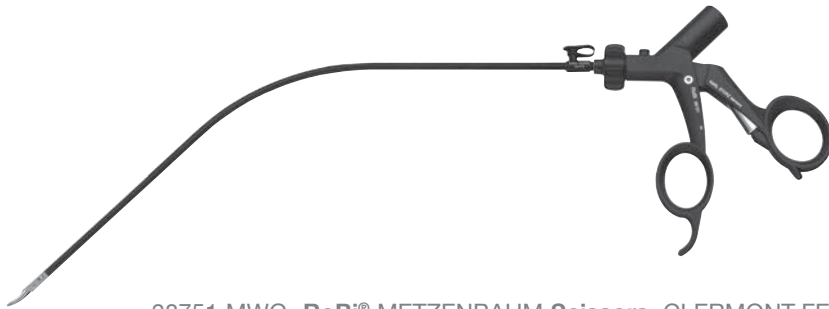
23178 KAR **KOH Macro Needle Holder, dismantling**, single action jaws, straight jaws, with tungsten carbide insert, with ergonomic handle, axial, with disengageable ratchet, ratchet position right, DAPRI sheath curve, size 5 mm including:  
**Outer Sheath**, with Working Insert  
**Handle**, axial for use with suture material size 0/0 to 7/0



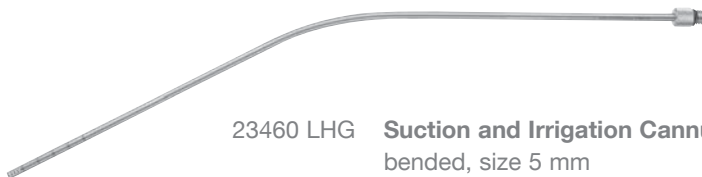
23261 MSG **CLICKLINE METZENBAUM Scissors**, rotating, curved, with connector pin for unipolar coagulation, double action jaws, length of jaws 12 mm, DAPRI sheath curve, size 5 mm, straight length 40 cm including:  
**Metal Handle**, insulated, without ratchet, with 4 locking positions  
**Outer Sheath**, with Working Insert



38751 ONG **RoBi® Grasping Forceps**, CLERMONT-FERRAND model, rotating, dismantling, with connector pin for bipolar coagulation, with especially fine atraumatic serration, fenestrated jaws, double action jaws, DAPRI sheath curve, size 5 mm, length 36 cm, including:  
**RoBi® Plastic Handle**, without Ratchet, color code: light blue  
**Outer Sheath**  
**Forceps Insert**



38751 MWG **RoBi® METZENBAUM Scissors**, CLERMONT-FERRAND model, rotating, dismantling, with connector pin for bipolar coagulation, double action jaws, curved slender scissor blades, DAPRI sheath curve, size 5 mm, length 36 cm including:  
**RoBi® Plastic Handle**, without ratchet  
**RoBi® Scissors Insert**, with Outer Sheath



23460 LHG **Suction and Irrigation Cannula**, with lateral holes, bended, size 5 mm



30805 **Handle**, with Two-Way Stopcock for suction and irrigation, autoclavable, for use with suction and irrigation tubes, size 5 mm

## Material supporting the TransAnal Platform:

### S-PILOT™ in combination with the ENDOFLATOR® 40 and ENDOFLATOR® 50

As smoke evacuation often leads to a loss in pressure, a reliable unit is required to restore gas loss safely and securely and to ensure that a stable cavity is maintained.

The new KARL STORZ insufflators – ENDOFLATOR® 40 (UI 400) and ENDOFLATOR® 50 (UI 500) – offer this reliability.

A new control concept in conjunction with an extremely high flow rate paves the way for smoke evacuation that functions perfectly. The sensitive unit algorithm immediately detects and reacts to any loss of pressure caused by suction. Pressure is restored with careful monitoring of the insufflation process.

The high-flow accessories such as the HICAP® trocars from KARL STORZ can easily achieve a maximum flow of 40 or 50 l/min. However, care should be taken to ensure that the underpressure in the suction container is not greater than 0.3 bar in order to prevent the cavity from collapsing.

A max 50 l/min in the high-flow mode and an integrated gas heater makes the ENDOFLATOR® 50 the insufflator of choice. During longer interventions, gas in the cavity is constantly being replaced due to smoke evacuation and the patient cools down quickly. The ENDOFLATOR® 50 and its heatable tubing set prevent this effect. Furthermore, the heated gas greatly minimizes telescope fogging.

With their CF classification, the ENDOFLATOR® 40 and ENDOFLATOR® 50 in combination with the equally CF-classified S-PILOT™ offers a multitude of potential application possibilities.

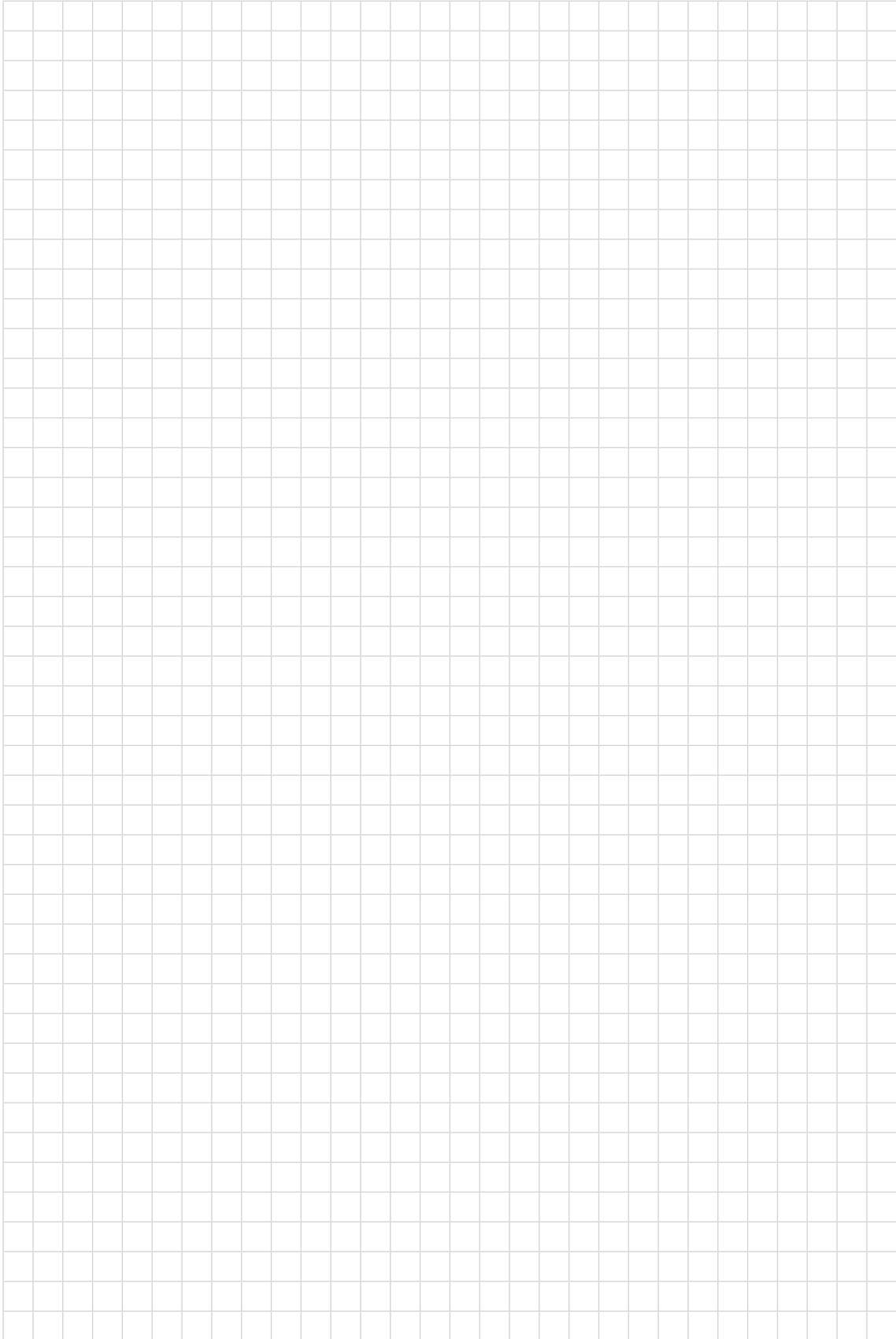


UP 501 S1 **S-PILOT™**, set incl. footswitch including:  
**One-Pedal Footswitch**  
**Tubing Set Suction**, sterile, for single use, package of 5  
**SCB Connecting Cable**, length 100 cm



UI 400 **ENDOFLATOR® 40 SCB**, with integrated SCB-module, power supply: 100-240 VAC, 50/60 Hz System requirements for use with SCB-PC: SCB-R-UI-software-release V03.17.00.01 or higher

## Notes







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