

Convincing Precision!



## **marSeal** IQ and **SealSafe**<sup>®</sup> IQ

The system for bipolar vessel sealing  
for open and laparoscopic surgery



## marSeal IQ



marSeal IQ



marSeal slim IQ



marSeal 5 IQ



### marSeal IQ Instruments

The marSeal IQ instruments are a universally applicable instrument that, thanks to its modular design offering different shaft lengths, can be used for laparoscopic applications as well as open surgery.

marSeal allows you to occlude veins, arteries and tissue bundles permanently and reliably. Besides, the instrument features an integrated blade mechanism by which the sealed zone can be conveniently cut in the middle once the sealing process has been completed – without any need to exchange instruments!

The instrument can be completely taken apart and autoclaved, with the blade being the only disposable part used in its design. This offers a further benefit in the form of a significant cost reduction, compared with an entirely disposable instrument.

- ✓ Dissect
- ✓ Seal
- ✓ Cut

## Intelligent vessel sealing with **marSeal IQ** and **SealSafe® IQ**

### **SealSafe® IQ**

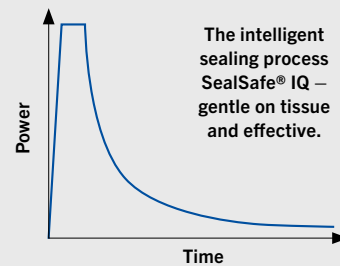
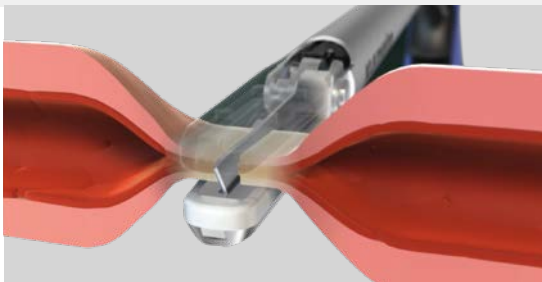
The bipolar vessel sealing system consisting of the maXium® high-frequency generator with its SealSafe® IQ current and the bipolar marSeal instruments allows you to seal vessels and tissue bundles effectively and lastingly without any need for previous dissection or detailed exposure of the tissue to be sealed.

Thanks to the precise SealSafe® IQ current specially adapted to this kind of application, only the tissue located between the instrument's jaws is sealed – lateral thermal tissue damage can thus be kept to an absolute minimum. This is explained by the high power-to-voltage ratio (high output power but low voltage) that is typical of the SealSafe® IQ current, distinguishing it from the conventional bipolar HF technique.

Besides, the SealSafe® IQ current has been optimized to reduce tissue adhesion or instrument incrustation drastically and prevent tissue carbonization as long as the current is used as intended.

## marSeal IQ instruments and maXium® – the bipolar sealing system for fast and safe interventions

The reusable sealing system – permanent occlusion of veins,  
arteries and tissue bundles with subsequent transection  
of the sealed tissue – no instrument exchange required!



Pressure (p) plus electric current (I) achieve the sealing

Due to the effective combination of high pressure (p) and electric current (I), a permanently sealed zone is reliably created on arteries, veins or tissue bundles. The instrument's ratchet plays a vital role here because it is important for the pressure to be maintained and kept constant throughout the sealing process.

During this process, endogenous structural proteins such as collagen and elastin are transformed so that a permanently sealed zone is created as a result.

This sealing method needs no exogenous materials such as sutures and clips at all. Advantage: Less postoperative pain, since tissue structures are left completely intact (e.g. no constriction by sutures).

## Plug and Play – automatic identification of instruments with intelligent IQ

As soon as an IQ instrument is connected, the maXium® automatically displays the name of the connected instrument and assigns the appropriate current type with an appropriate default value. When connecting an instrument that is actuated via the foot switch, the foot switch selection menu is automatically called up. If you choose not to use the instrument-specific default values, you can change them according to your individual needs and save them for the specific program as usual.

The advantage: When the IQ instrument is connected again, your individual values appear instead of the default values. At present, the following products are available with the IQ function in connection with the SealSafe® IQ current: marSeal IQ, marSeal slim IQ and marSeal5 IQ.



## Modular system Instruments for laparoscopic applications and open surgery

Instead of one-way, more ways for all,  
who take responsibility

### Advantages offered by the marSeal IQ instruments

- Dissecting, sealing, cutting – no instrument exchange required
- Reliable sealing with easy transection of the sealed tissue (for vessels up to 7 mm with a burst pressure of over 360 mm Hg)
- Supported by the maXium® HF unit and its optimally adapted SealSafe® IQ current, marSeal
  - minimizes tissue adhesion and resulting incrustation of contact surfaces
  - reduces tissue damage from lateral heat spread (< 2 mm)
  - provides an efficient, time-saving sealing process
  - offers automatically the type of current belonging to the instrument, together with a suitable default value
- Activation of the current can be performed directly by means of the push buttons integrated into the electrode handle. There is no foot switch necessary for activation.
- The ratchet integrated into the handle ensures that a constant pressure is applied to the target tissue as required for effective sealing
- The ergonomic design of the handle provides for ease of use, preventing fatigue in the surgeon's hand during the sealing and cutting process
- Easy application of the instrument to the target tissue as the tubular shaft can be rotated by 360°
- Cost reduction due to minimal share of disposables
- Modular system with different shaft lengths for laparoscopic applications as well as open surgery
- Easy cleaning as the instrument can be taken apart completely
- Validated cleaning process
- Autoclavable at 134°C (273.2°F), acc. to ISO 17665-1



#### **marSeal – occlude and dissect without changing instrument**

It was a question of conviction, to develop these reusable instruments for the bipolar sealing of vessels. KLS Martin has succeeded in offering an alternative to the use of one-way instruments with the marSeal instruments.

By using marSeal, far less special waste is created, which needs to be disposed of at high cost and harms the environment. The marSeal instruments require a minimum amount of one-way materials. Only blades or blade holders are disposable products. In comparison: 50 blade holders for the marSeal5 IQ create 0.5 kg of waste. 50 one-way products create nearly 15 kg of waste. The instruments are also economical: When using marSeal instruments, the costs per application (marSeal purchase price + set-up costs + one-off costs) are only around  $\frac{1}{4}$  of the costs of a comparable disposable instrument.

In addition to the economic benefits, the instrument also has many medical benefits. The combination of instrument and special sealing current allows for a shorter operating time, less blood loss and thus less physical strain for the patient.



## Modular system Instruments for laparoscopic applications and open surgery



Sigmoidectomy with marSeal slim IQ



Nissen fundoplication with marSeal slim IQ

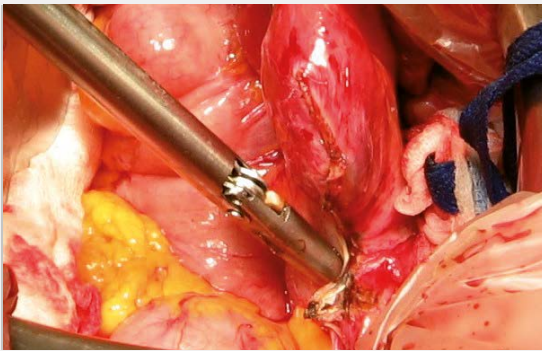
### **Application of marSeal IQ in gynecology:**

- Laparoscopic Supracervical Hysterectomy (LASH)
- Laparoscopically Assisted Vaginal Hysterectomy (LAVH )
- Total Laparoscopic Hysterectomy (TLH)
- Vaginal hysterectomy
- Abdominal hysterectomy
- Ovariectomy and salpingectomy
- Adhesiolysis
- Cystectomy

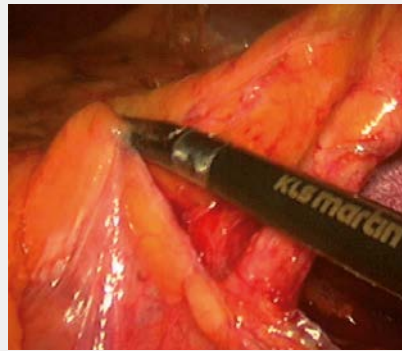
### **Application of marSeal IQ in general surgery:**

- Colectomy
- Nissen fundoplication
- Gastrectomy
- Splenectomy
- Adrenalectomy
- Nephrectomy
- Cholecystectomy

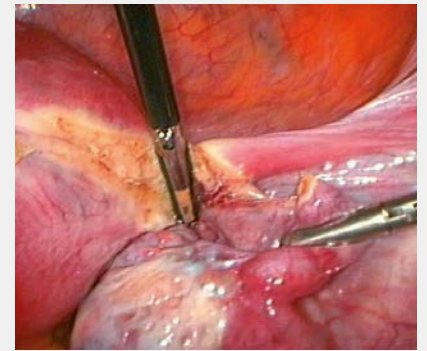




Abdominal hysterectomy with marSeal IQ



Lap. sigmoidectomy with marSeal5 IQ



LASH with marSeal5 IQ

### Product feature comparison

	marSeal5 IQ	marSeal5 IQ IQ short	marSeal IQ marSeal slim IQ
Shaft, rotatable	5 mm	5 mm	10 mm
Shaft length	370 mm	200 mm	200 mm 370 mm
IQ connector (requires maXium® with HW 06 or higher and software V3.400 or higher)	✓	✓	✓
“Plug and Play” – smart bipolar vessel sealing forceps with instrument identification feature	✓	✓	✓
Current and output power automatically set on maXium® HF generator	✓	✓	✓
Retention of the maXium®’s proven program philosophy	✓	✓	✓
Manual and foot activation	✓	✓	✓
Integrated cutting blade	✓	✓	✓
Blade/blade shaft as a non-sterile disposable product	✓	✓	✓
Blade/blade shaft as a sterile disposable product	✓		✓

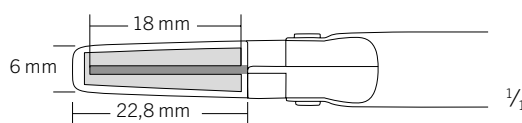


## The marSeal instrument set at a glance

### marSeal IQ

#### marSeal system

Instrument, complete (incl. 80-630-17-04, 80-630-18-04), without blades	
80-630-41-04	„IQ“-Version, Schaftlänge 200 mm
Individual components	
80-630-45-04	Handle „IQ“
80-630-12-04	Tubular shaft, Length 200 mm (incl. 80-630-17-04)
Consumables	
80-630-15-04	Disposable blade, Length 200 mm, SU = 6/pack
80-630-16-04	Disposable blade, Length 200 mm, sterile, SU = 10/pack
Cleaning and reprocessing tools	
80-630-17-04	Cleaning tool
80-630-18-04	Flushing adapter
55-803-74-04	Storing tray marSeal/marSeal slim IQ, with lid, 530 x 250 x 60 mm



80-630-15-04 / 80-630-16-04





### marSeal instrument components

	Handle IQ-connector (HW 06) 80-630-45-04	Tubular shaft* 200 mm 80-630-12-04	Blade 80-630-15-04
marSeal cpl. 200 mm, Stecker IQ (HW 06), 80-630-41-04	<b>X</b>	<b>X</b>	<b>X</b>

\*incl. blade shaft, cleaning tool and flushing adapter



4 m/13 ft.

The corresponding marSeal IQ tray can also be used for cleaning and sterilization.





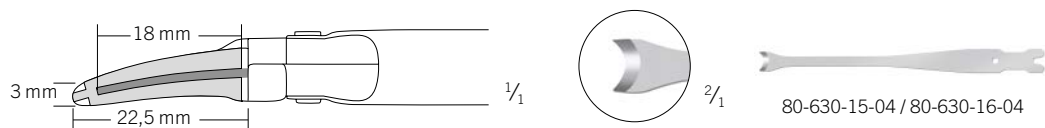
Convincing Precision!

The marSeal slim instrument set  
at a glance

**marSeal** slim IQ

#### marSeal slim system

Instrument, complete (incl. 80-630-17-04, 80-630-18-04), without blades	
80-630-42-04	„IQ“-Version, shaft length 370 mm
80-630-43-04	„IQ“-Version <i>short</i> , shaft length 200 mm
Individual components	
80-630-45-04	„IQ“-handle
80-630-34-04	Tubular shaft, length 370 mm (incl. 80-630-17-04)
80-630-35-04	Tubular shaft, length 200 mm (incl. 80-630-17-04)
Consumables	
80-630-15-04	Disposable blade, SU = 6 Stck.
80-630-16-04	Disposable blade, steril, SU = 10 Stck.
Cleaning and reprocessing tools	
80-630-17-04	Cleaning tool
80-630-18-04	Flushing adapter
55-803-74-04	Storing tray marSeal/marSeal slimIQ, with lid, 530 x 250 x 60 mm





**marSeal slim instrument components**

	Handle IQ-connector (HW 06) 80-630-45-04	Tubular shaft slim* 370 mm 80-630-34-04	Tubular shaft slim* 200 mm 80-630-35-04	Blade 80-630-15-04
marSeal slim cpl., 370 mm, Conector IQ (HW 06), 80-630-42-04	x	x		x
marSeal slim cpl., 200 mm Conector IQ (HW 06), 80-630-43-04	x		x	x

\*incl. blade shaft, cleaning tool and flushing adapter



4 m/13 ft.

The corresponding marSeal slim IQ tray can also be used for cleaning and sterilization.



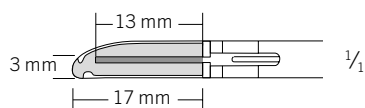


## The marSeal5 instrument set at a glance

**marSeal**5 IQ  
**marSeal**5 IQ short

### marSeal5 system

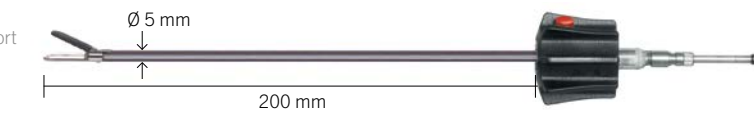
Instrument, complete (incl. 80-630-58-04, 80-630-59-04), without blades	
80-630-50-04	„IQ“-Version, shaft length 370 mm
80-630-90-04	„IQ“-Version <i>short</i> , shaft length 200 mm
Individual components	
80-630-52-04	„IQ“-handle
80-630-51-04	Tubular shaft for marSeal5 IQ, length 370 mm (incl. 80-630-58-04)
80-630-92-04	Tubular shaft for marSeal5 IQ short, length 200 mm (incl. 80-630-58-04)
Consumables	
80-630-53-04	Disposable blade insert, 370 mm long, SU = 6/pack
80-630-91-04	Disposable blade insert for marSeal5 IQ short, 200 mm long, SU = 6/pack
80-630-83-04	Disposable blade insert, 370 mm long, sterile, SU = 10/pack
Cleaning and reprocessing tools	
80-630-58-04	Cleaning tool
80-630-59-04	Flushing adapter
55-803-73-04	Storing tray marSeal5 IQ, with lid, 530 x 250 x 60 mm



marSeal5 IQ



marSeal5 IQ short



80-630-91-04





### marSeal slim instrument components

	Handle IQ-connector (HW 06) 80-630-52-04	Tubular shaft slim* 370 mm 80-630-51-04	Tubular shaft slim* 200 mm 80-630-92-04	Blade shaft with blades 370 mm 80-630-53-04	Blade shaft with blades 200 mm 80-630-91-04
marSeal5 cpl., 370 mm, Connector IQ (HW 06), 80-630-50-04	x	x		x	
marSeal5 short cpl., 200 mm Connector IQ (HW 06), 80-630-90-04	x		x		x

\*incl. blade shaft, cleaning tool and flushing adapter



4 m/13 ft.

The corresponding marSeal5 IQ / marSeal5 IQ short tray can also be used for cleaning and sterilization.





## KLS Martin Group

### KLS Martin Australia Pty Ltd.

Sydney · Australia  
Tel. +61 2 9439 5316  
australia@klsmartin.com

### KLS Martin do Brasil Ltda.

São Paulo · Brazil  
Tel. +55 11 3554 2299  
brazil@klsmartin.com

### KLS Martin Medical (Shanghai) International Trading Co., Ltd

Shanghai · China  
Tel. +86 21 5820 6251  
info@klsmartin.com

### KLS Martin India Pvt Ltd.

Chennai · India  
Tel. +91 44 66 442 300  
india@klsmartin.com

### KLS Martin Italia S.r.l.

Milan · Italy  
Tel. +39 039 605 67 31  
info@klsmartin.com

### KLS Martin Japan K.K.

Tokyo · Japan  
Tel. +81 3 3814 1431  
info@klsmartin.com

### KLS Martin SE Asia Sdn. Bhd.

Penang · Malaysia  
Tel. +604 261 7060  
malaysia@klsmartin.com

### KLS Martin de México, S.A. de C.V.

Mexico City · Mexico  
Tel. +52 55 7572 0944  
mexico@klsmartin.com

### KLS Martin Nederland B.V.

Huizen · Netherlands  
Tel. +31 35 523 45 38  
info@klsmartin.com

### KLS Martin SE & Co. KG

Moscow · Russia  
Tel. +7 499 792 76 19  
russia@klsmartin.com

### KLS Martin Taiwan Ltd.

Taipei · Taiwan  
Tel. +886 2 2325 3169  
taiwan@klsmartin.com

### KLS Martin SE & Co. KG

Dubai · United Arab Emirates  
Tel. +971 4 454 16 55  
middleeast@klsmartin.com

### KLS Martin UK Ltd.

Reading · United Kingdom  
Tel. +44 118 467 1500  
info.uk@klsmartin.com

### KLS Martin LP

Jacksonville · Florida, USA  
Tel. +1 904 641 77 46  
usa@klsmartin.com

### KLS Martin SE Asia Sdn. Bhd.

Hanoi · Vietnam  
Tel. +49 7461 706-0  
info@klsmartin.com

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### KLS Martin SE & Co. KG

A company of the KLS Martin Group

KLS Martin Platz 1 · 78532 Tuttlingen · Germany  
PO Box 60 · 78501 Tuttlingen · Germany  
Tel. +49 7461 706-0 · Fax +49 7461 706-193  
info@klsmartin.com · www.klsmartin.com