

**mar**Seal IQ

**mar**Seal 5 IQ

&

**mar**Seal 5 IQ *short*



Convincing Precision!

## marSeal IQ and SealSafe® IQ

*The system for bipolar vessel sealing  
for open and laparoscopic surgery*





## *mar*Seal 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*

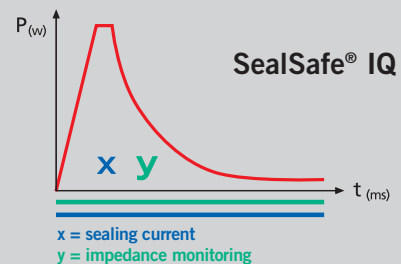
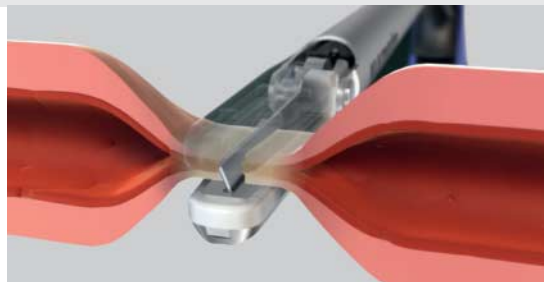
The bipolar vessel sealing system consisting of the maxium® high-frequency generator with its SealSafe® IQ current and the bipolar marSeal instruments allows you to seal vessels and tissue bundles effectively and lastingly without any need for previous dissection or detailed exposure of the tissue to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

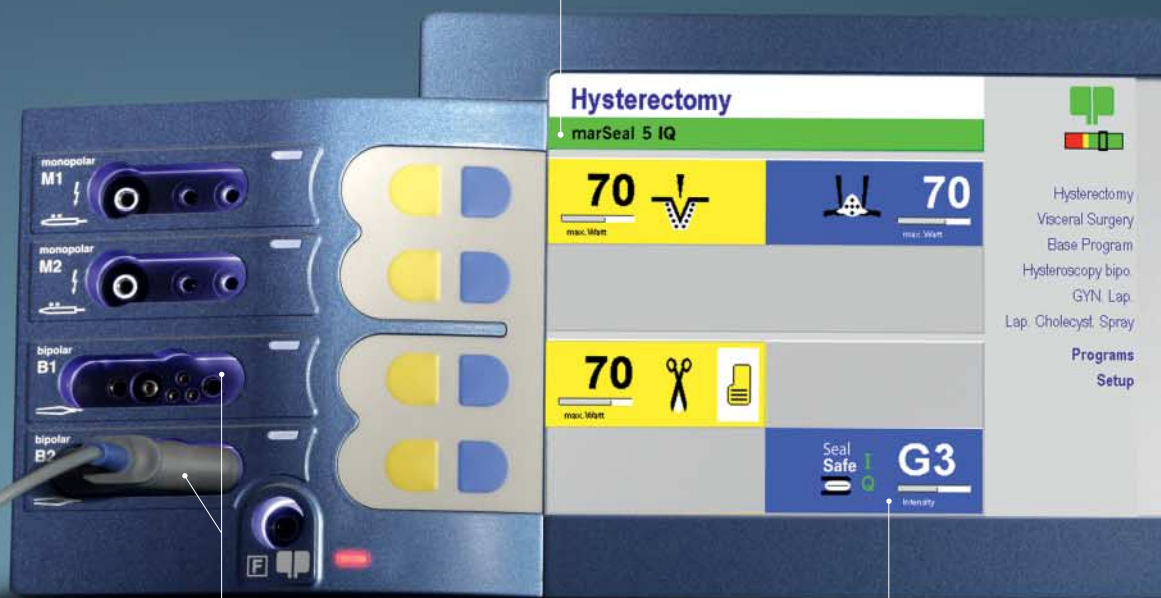
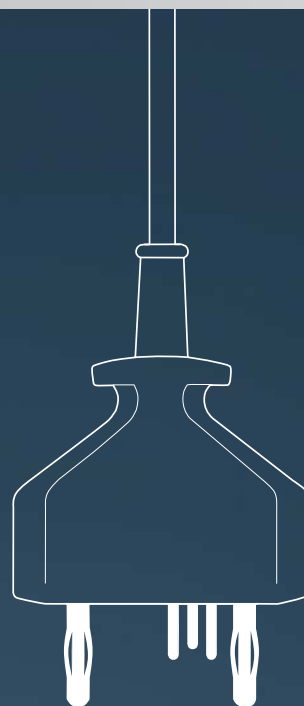
During this process, endogenous structural proteins such as collagen and elastin are transformed so that a permanently sealed zone is created as a result.

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 marSeal 5 IQ.



Displaying the name of the connected instrument

Use of the two bipolar connecting sockets

Automatic assignment of the required current type and set-up of the required performance parameters

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

*Advantages offered by the marSeal IQ and marSeal instruments*

- Dissecting, sealing, cutting – no instrument exchange required
- Reliable sealing with easy transection of the sealed tissue
- 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
  - provides an efficient, time-saving sealing process
  - offers automatically the type of current belonging to the instrument, together with a suitable default value (IQ instruments only)
- 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 (IQ instruments only)
- 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)



*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 marSeal 5 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 ¼ of the costs of a comparable disposable instrument.

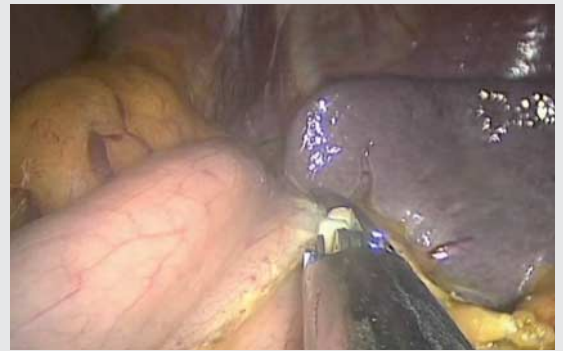
In addition to the economic benefits, the instrument also has many medical benefits. The combination of instrument and special sealing current allows for a shorter operating time, less blood loss and thus less physical strain for the patient.

## *Modular system*

### Instruments for laparoscopic applications and open surgery



Sigmoidectomy with marSeal Slim



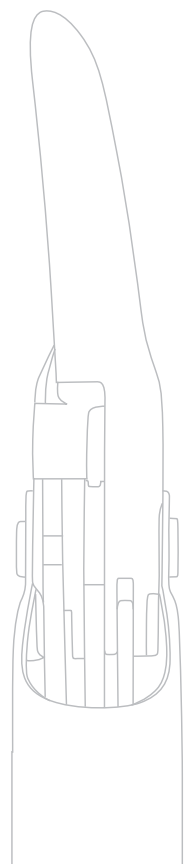
Nissen fundoplication with marSeal Slim

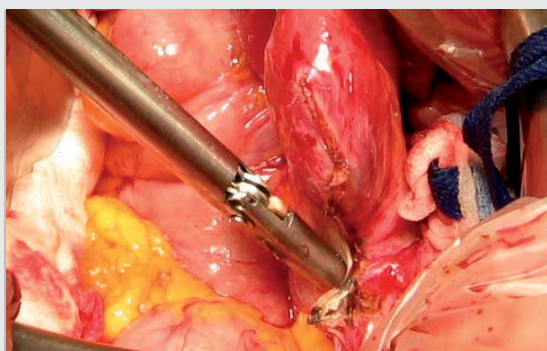
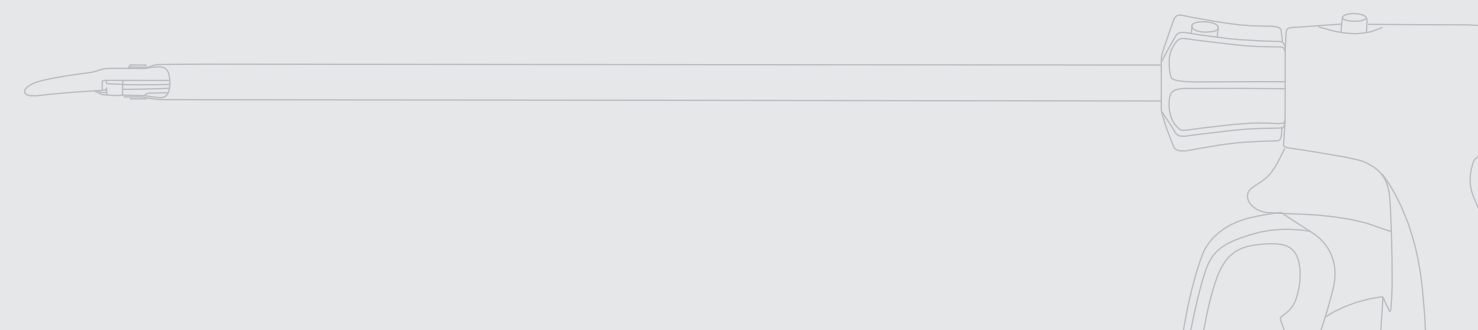
#### *Application of marSeal IQ and marSeal in gynecology:*

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

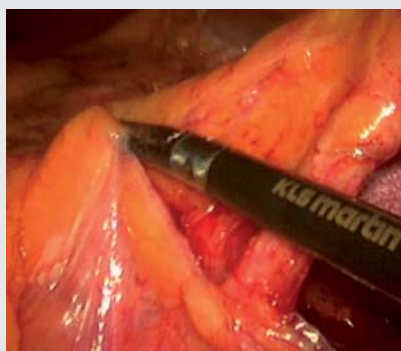
#### *Application of marSeal IQ and marSeal in general surgery:*

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

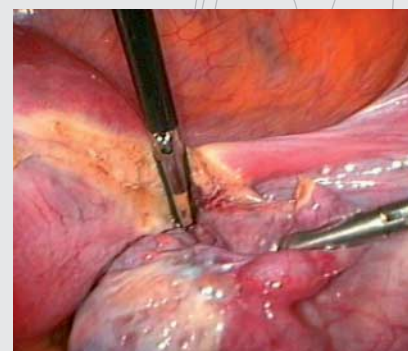




Abdominal hysterectomy with marSeal



Lap. sigmoidectomy with marSeal 5



LASH with marSeal 5

### *Product feature comparison*

|   | marSeal 5 | marSeal 5<br>IQ short | marSeal<br>marSeal Slim |
|---|-----------|-----------------------|-------------------------|
| Shaft, rotatable  | 5 mm      | 5 mm                  | 10 mm                   |
| Shaft length  | 370 mm    | 200 mm                | 200 mm<br>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  | ✓         | ✓                     | ✓                       |
| Instruments compatible with the KLS Martin maxium® HF generator from hardware 00-06           | ✓         |                       | ✓                       |
| Manual and foot activation when using IQ connector  | ✓         | ✓                     | ✓                       |
| Connectors for all “m”-, “i”- and “e”- versions of the maxium®                                | ✓         | ✓                     | ✓                       |
| Foot activation with “m”- and “i”- connectors   | ✓         | ✓                     | ✓                       |
| Integrated cutting blade  | ✓         | ✓                     | ✓                       |
| Blade as a non-sterile disposable product   | ✓         | ✓                     | ✓                       |
| Blade shaft as a sterile disposable product   | ✓         |                       |                         |



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*The marSeal instrument set  
at a glance*

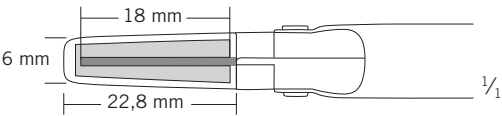
**mar**Seal  
**mar**Seal IQ

*marSeal system*

|              | Instrument, complete  |
|--------------|---|
| 80-630-41-04 | "IQ"-version  |
| 80-630-01-04 | "m"-version   |
| 80-630-03-04 | "i"-/"e"-version  |
|              |   |
|              | Components  |
| 80-630-45-04 | "IQ"-handle   |
| 80-630-08-04 | Handle "m"-version  |
| 80-630-09-04 | Handle "i"-/"e"-version   |
| 80-630-12-04 | Tubular shaft, incl. blade shaft, cleaning tool and rinsing adapter |
| 80-630-15-04 | Disposable blade, SU = 6/pack                                       |
| 80-630-17-04 | Cleaning tool   |
| 80-630-18-04 | Flushing adapter  |



80-630-15-04





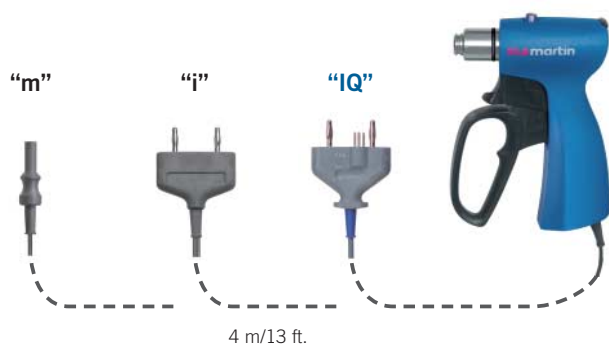
maxium®



### marSeal instrument components

|  | Handle,<br>KLS Martin<br>connector<br>80-630-08-04 | Handle,<br>international<br>connector<br>80-630-09-04 | Handle,<br>IQ-connector<br>(HW 06)<br>80-630-45-04 | Tubular shaft*<br>200 mm<br>80-630-12-04 | Blade<br>80-630-15-04 |
|--|--|---|--|--|-----------------------|
| marSeal cpl. 200 mm,<br>KLS Martin connector, 80-630-01-04         | X  |   |  | X  | X                     |
| marSeal cpl. 200 mm,<br>international connector, 80-630-03-04      |  | X   |  | X  | X                     |
| <b>marSeal cpl. 200 mm,<br/>IQ-connector (HW 06), 80-630-41-04</b> |  |   | X  | X  | X                     |

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





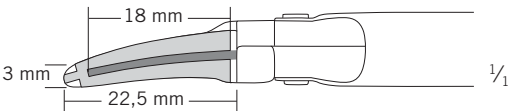
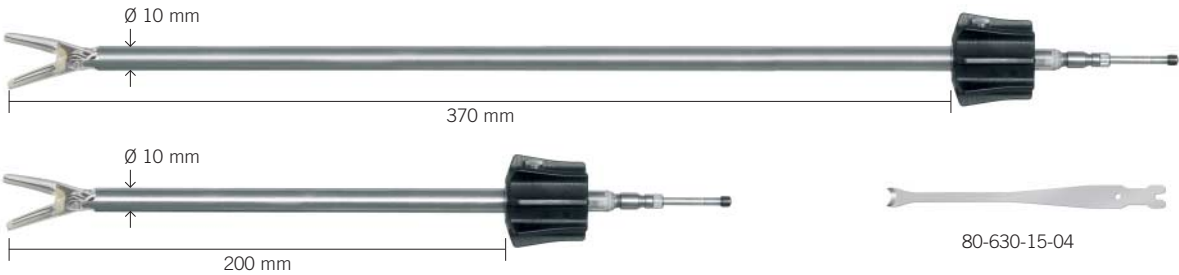
Convincing Precision!

*The marSeal Slim instrument set  
at a glance*

**marSeal Slim**  
**marSeal Slim IQ**

*marSeal Slim system*

|              | Instrument, complete   |
|--------------|--|
| 80-630-42-04 | "IQ"-version, shaft length 370 mm  |
| 80-630-43-04 | "IQ"-version, shaft length 200 mm  |
| 80-630-30-04 | "m"-version, shaft length 370 mm   |
| 80-630-32-04 | "m"-version, shaft length 200 mm   |
| 80-630-31-04 | "i"/-"e"-version, shaft length 370 mm  |
| 80-630-33-04 | "i"/-"e"-version, shaft length 200 mm  |
|              | Components   |
| 80-630-45-04 | "IQ"-handle  |
| 80-630-08-04 | Handle "m"-version   |
| 80-630-09-04 | Handle "i"/-"e"-version  |
| 80-630-34-04 | Tubular shaft, 370 mm long, incl. blade shaft, cleaning tool and rinsing adapter |
| 80-630-35-04 | Tubular shaft, 200 mm long, incl. blade shaft, cleaning tool and rinsing adapter |
| 80-630-15-04 | Disposable blade, SU = 6/pack  |
| 80-630-17-04 | Cleaning tool  |
| 80-630-18-04 | Flushing adapter   |

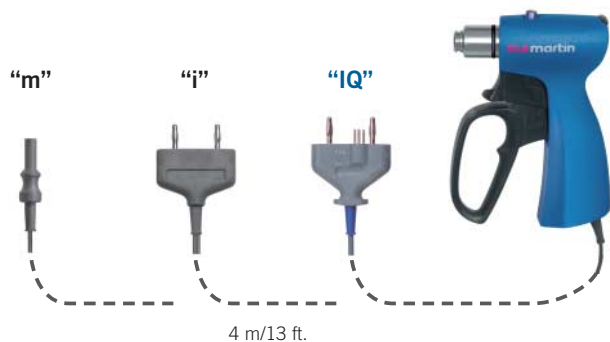




### marSeal Slim instrument components

|  | Handle,<br>KLS Martin<br>connector<br>80-630-08-04 | Handle,<br>international<br>connector<br>80-630-09-04 | Handle,<br>IQ-connector<br>(HW 06)<br>80-630-45-04 | Tubular shaft Slim *<br>370 mm<br>80-630-34-04 | Tubular shaft Slim *<br>200 mm<br>80-630-35-04 | Blade<br>80-630-15-04 |
|--|--|---|--|--|--|-----------------------|
| marSeal Slim cpl. 370 mm,<br>KLS Martin connector, 80-630-30-04    | X  |   |  | X  |  | X                     |
| marSeal Slim cpl. 200 mm,<br>KLS Martin connector, 80-630-32-04    | X  |   |  |  | X  | X                     |
| marSeal Slim cpl. 370 mm,<br>international connector, 80-630-31-04 |  | X   |  | X  |  | X                     |
| marSeal Slim cpl. 200 mm,<br>international connector, 80-630-33-04 |  | X   |  |  | X  | X                     |
| marSeal Slim cpl. 370 mm,<br>IQ-connector (HW 06), 80-630-42-04    |  |   | X  | X  |  | X                     |
| marSeal Slim cpl. 200 mm,<br>IQ-connector (HW 06), 80-630-43-04    |  |   | X  |  | X  | X                     |

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





*The marSeal 5 instrument set  
at a glance*

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

*marSeal 5 system*

|              | Instrument, complete  |
|--------------|---|
| 80-630-50-04 | Version "IQ", shaft length 370 mm   |
| 80-630-90-04 | Version "IQ" short, shaft length 200 mm   |
| 80-630-54-04 | Version "m", shaft length 370 mm  |
| 80-630-55-04 | Version "i"/"e", shaft length 370 mm  |
|              | Components  |
| 80-630-52-04 | Handle "IQ"   |
| 80-630-56-04 | Handle "m" version  |
| 80-630-57-04 | Handle "i"/"e" version  |
| 80-630-51-04 | Tubular shaft, 370 mm long, cleaning tool and flushing adapter                        |
| 80-630-92-04 | Tubular shaft for marSeal 5 IQ short, 200 mm long, cleaning tool and flushing adapter |
| 80-630-53-04 | Disposable blade rod, 370 mm long, SU = 6/pack  |
| 80-630-91-04 | Disposable blade rod for marSeal 5 IQ short, 200 mm long, SU = 6/pack                 |
| 80-630-83-04 | Disposable blade rod, 370 mm long, sterile, SU = 10/pack                              |
| 80-630-58-04 | Cleaning tool   |
| 80-630-59-04 | Flushing adapter  |





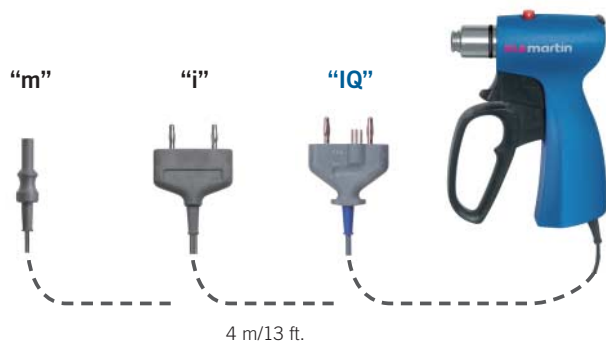
maXium®



### marSeal 5 instrument components

|  | Handle,<br>IQ-connector<br>(HW 06)<br>80-630-52-04 | Handle,<br>KLS Martin<br>connector<br>80-630-56-04 | Handle,<br>international<br>connector<br>80-630-57-04 | Tubular shaft*<br>370 mm<br>80-630-51-04 | Tubular shaft*<br>200 mm<br>80-630-92-04 | Blade shaft<br>with blade<br>370 mm<br>80-630-53-04 | Blade shaft<br>with blade<br>200 mm<br>80-630-91-04 |
|--|--|--|---|--|--|---|---|
| marSeal 5 cpl., 370 mm,<br>IQ-connector (HW 06), 80-630-50-04      | X  |  |   | X  |  | X   |   |
| marSeal 5 short cpl., 200 mm<br>IQ-connector (HW 06), 80-630-90-04 | X  |  |   |  | X  |   | X   |
| marSeal 5 cpl., 370 mm,<br>KLS Martin connector, 80-630-54-04      |  | X  |   | X  |  | X   |   |
| marSeal 5 cpl., 370 mm,<br>international connector, 80-630-55-04   |  |  | X   | X  |  | X   |   |

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



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