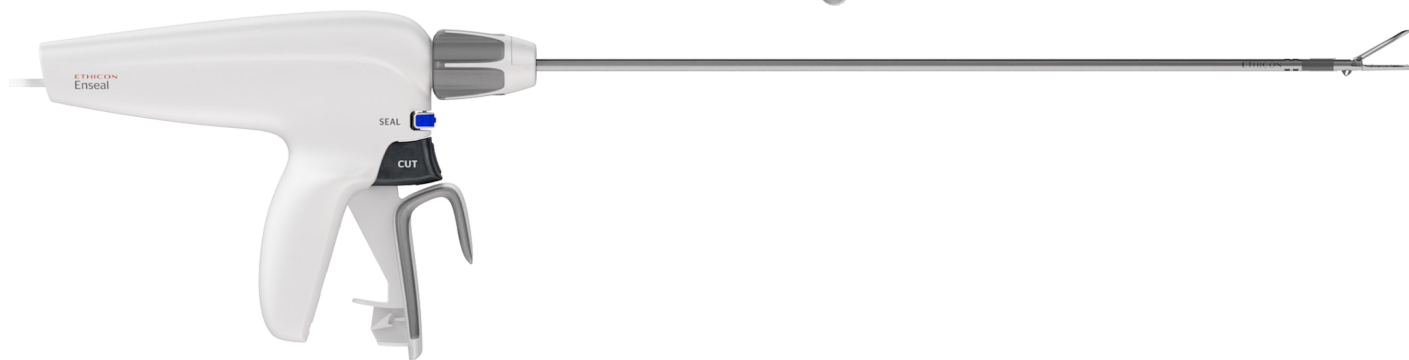


Enseal®

# More efficient<sup>1</sup>

ENSEAL® X1 Curved Jaw Tissue Sealer



ENSEAL® X1  
Curved Jaw

vs.

LigaSure™  
Maryland

**More tissue per bite** 16% longer jaw and 9% wider aperture<sup>2</sup>



**X**

**More secure grasping** 32% stronger grasping<sup>3</sup>



**X**

**More continuous rotation** 360° continuous shaft rotation<sup>4</sup>



**X**

**Stronger sealing capabilities** Sealed vessels with 22% higher burst pressures<sup>5</sup>



**X**

Ease of use Separate seal and cut<sup>6</sup>



**1.** ENSEAL® X1 Curved Jaw Tissue Sealer can capture, seal and transect a longer length of tissue per single activation due to a 16% (or 3.4mm) longer jaw ( $p < 0.001$ ) and a 19% (or 3.5mm) longer cut length ( $p < 0.001$ ) compared to LigaSure™ Maryland (145163-200630). **2.** Based on metrology data, ENSEAL® X1 Curved Jaw Tissue Sealer has a 16% (or 3.4mm) longer jaw than LigaSure™ Maryland (LF1937) ( $p < 0.001$ ) and ENSEAL® X1 Curved Jaw Tissue Sealer has a 9% (or 1.15mm) wider jaw aperture than LigaSure™ Maryland (LF1937) ( $p < 0.001$ ) (145041-200629). **3.** Grasping force measured as the maximum amount of force required to pull porcine jejunum from the distal tip of device jaws. Comparison of ENSEAL® X1 Curved Jaw to LigaSure™ Maryland (LF1937) ( $p < 0.001$ ) (145160-200630). **4.** (093781-180619). **5.** Comparison of ENSEAL® X1 Curved Jaw to LigaSure™ Maryland (LF1937). Benchtop testing on porcine arteries (1055mmHg vs. 862mmHg,  $p < 0.001$ ) (145069-200629). **6.** (093782-180619).

**ETHICON**  
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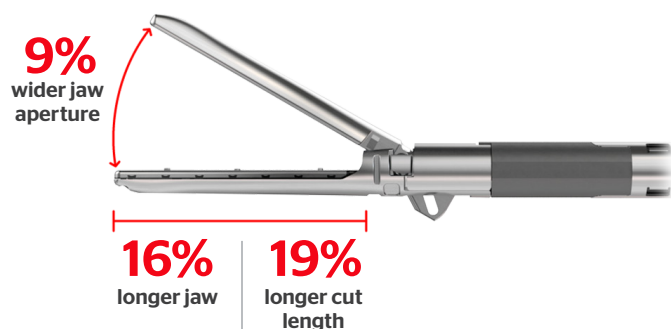
Shaping  
the future  
of surgery

# ENSEAL® X1 Curved Jaw

vs.

# LigaSure™ Maryland

## More tissue per bite

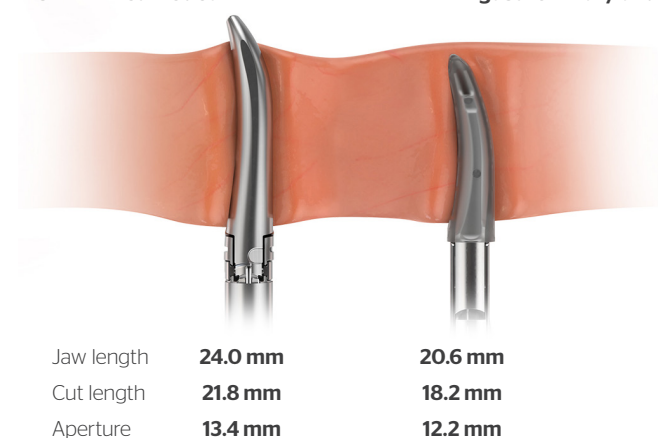


ENSEAL® X1 Curved Jaw can capture more tissue per bite with a **16% longer jaw** and **9% wider jaw aperture** compared to LigaSure™ Maryland.<sup>1</sup>

## More secure grasping

ENSEAL® X1 Curved Jaw

LigaSure™ Maryland



ENSEAL® X1 Curved Jaw demonstrated **32% stronger grasping** with the distal tip compared to LigaSure™ Maryland.<sup>2</sup>

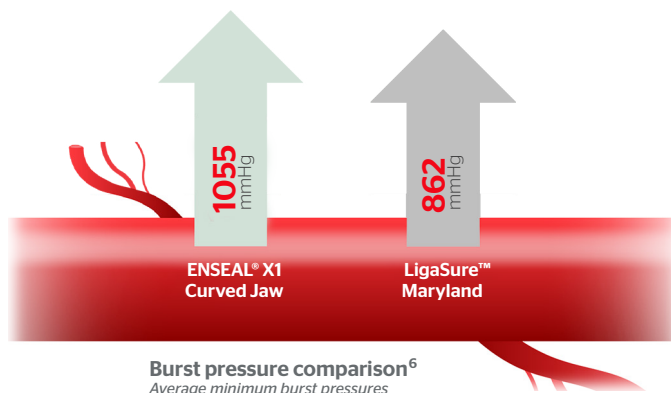
## Ease of use



ENSEAL® X1 Curved Jaw was designed with:

- 360° continuous shaft rotation to enable **easy access** to targeted tissue<sup>3</sup>
- **Separate seal and cut** capabilities<sup>4</sup>
- Conveniently placed control buttons for **less hand movement**<sup>5</sup>

## Stronger sealing capabilities



Vessels sealed with ENSEAL® X1 Curved Jaw had a **22% higher** average burst pressure than vessels sealed with LigaSure™ Maryland<sup>6</sup>.

ENSEAL® X1 Curved Jaw Tissue Sealer achieved first pass hemostasis on 100% of vessels sealed and maintained hemostasis during an elevated blood pressure challenge in preclinical testing<sup>7</sup>.

**For more information, contact your local Ethicon sales professional or go to [www.enseal.com/X1](http://www.enseal.com/X1)**

**1.** Based on metrology data, ENSEAL® X1 Curved Jaw Tissue Sealer has a 16% (or 3.4mm) longer jaw than LigaSure™ Maryland (LF1937) ( $p < 0.001$ ) and ENSEAL® X1 Curved Jaw Tissue Sealer has a 9% (or 1.15mm) wider jaw aperture than LigaSure™ Maryland (LF1937) ( $p < 0.001$ ) (145041-200629). **2.** Grasping force measured as the maximum amount of force required to pull porcine jejunum from the distal tip of device jaws. Comparison of ENSEAL® X1 Curved Jaw to LigaSure™ Maryland (LF1937) ( $p < 0.001$ ). (149828-200813). **3.** (093778-180619). **4.** (093782-180619). **5.** (095686-180724). **6.** Comparison of ENSEAL® X1 Curved Jaw to LigaSure™ Maryland (LF1937). Benchtop testing on porcine arteries (1055mmHg vs. 862mmHg,  $p < 0.001$ ) (145069-200629). **7.** 112 of 112 vessels sealed successfully on first pass in an acute porcine model. All seals maintained hemostasis during blood pressure challenge. During blood pressure challenge, systolic blood pressure was increased to at least 200 mmHg for a minimum of 10 minutes to simulate a hypertensive crisis. (095317-200519).

Enseal®

# ENSEAL® X1 Tissue Sealers Expect more.<sup>1,2,3</sup>



ENSEAL® X1 CURVED JAW TISSUE SEALER

ENSEAL® X1 STRAIGHT JAW TISSUE SEALER

ENSEAL® X1 LARGE JAW TISSUE SEALER

 **ETHICON**  
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Shaping  
the future  
of surgery

**1.** ENSEAL® X1 Curved Jaw has a longer jaw, longer cut length and wider jaw aperture compared to LigaSure Maryland (LF1937) ( $p < 0.001$ ). In benchtop testing on porcine arteries, vessels sealed with ENSEAL® X1 Curved Jaw had a 22% higher average burst pressure than vessels sealed with LigaSure™ Maryland (LF1937), (1055mmHg vs. 862mmHg,  $p < 0.001$ ). (145171-200630). **2.** Based on metrology data, ENSEAL® X1 Straight Jaw Tissue Sealer has a 6% (or 1.1mm) longer jaw than LigaSure™ Blunt Tip (LF1837) ( $p < 0.001$ ). (093775-210608). **3.** Preclinical test of distal tip bleeding (ENSEAL® vs. Impact-LF4318) in thick porcine mesentery base ( $p=0.001$ ). (093443-201029).

# ENSEAL<sup>®</sup> X1 Tissue Sealers **offer more** than LigaSure<sup>™</sup>

**More secure<sup>4</sup>**



**More efficient<sup>5,6</sup>**

The ENSEAL X1 Tissue Sealers are advanced bipolar devices designed for use in open or laparoscopic surgical procedures.\* They have been completely redesigned to provide secure sealing with more intuitive, simplified steps-for-use.

\*ENSEAL X1 Large Jaw is intended for use in open surgical procedures

**4.** Preclinical test of distal tip bleeding (ENSEAL<sup>®</sup> X1 Large Jaw vs Impact-LF4318) in thick porcine mesentery base (p=0.001). (093443-201029). **5.** ENSEAL<sup>®</sup> X1 Curved Jaw Tissue Sealer can capture, seal and transect a longer length of tissue per single activation due to a 16% (or 3.4mm) longer jaw (p < 0.001) and a 19% (or 3.5mm) longer cut length (p < 0.001) compared to LigaSure<sup>™</sup> Maryland (LF1937). (145163-200630). **6.** Based on metrology data, ENSEAL<sup>®</sup> X1 Straight Jaw Tissue Sealer has a 6% (or 1.1mm) longer jaw than LigaSure<sup>™</sup> Blunt Tip (LF1837) (p < 0.001). (093775-210608).

# ENSEAL® X1 Curved Jaw Tissue Sealer

## More efficient than LigaSure™ Maryland<sup>7</sup>

- Can **capture more tissue** per bite with a longer jaw and wider jaw aperture<sup>8</sup>
- **32% stronger distal tip grasping** compared to LigaSure™ Maryland<sup>9</sup>
- **360° continuous shaft rotation** to enable easy access to targeted tissue<sup>10</sup>

Curved, tapered tip  
designed for fine dissection<sup>11</sup>

ENSEAL® X1 Curved Jaw can capture more tissue per bite with a longer jaw and wider jaw aperture compared to LigaSure™ Maryland<sup>8</sup>

**9%**  
wider jaw  
aperture<sup>8</sup>

**16%**  
longer jaw<sup>8</sup>

**19%**  
longer cut<sup>7</sup>  
length

ENSEAL® X1 Curved Jaw

LigaSure™ Maryland

**REFERENCES:** **7.** ENSEAL® X1 Curved Jaw Tissue Sealer can capture, seal and transect a longer length of tissue per single activation due to a 16% (or 3.4mm) longer jaw ( $p < 0.001$ ) and a 19% (or 3.5mm) longer cut length ( $p < 0.001$ ) compared to LigaSure™ Maryland (LF1937). (093769-210528). **8.** Based on metrology data, ENSEAL® X1 Curved Jaw Tissue Sealer has a 16% (or 3.4mm) longer jaw than LigaSure™ Maryland (LF1937) ( $p < 0.001$ ) and ENSEAL X1 Curved Jaw Tissue Sealer has a 9% (or 1.15mm) wider jaw aperture than LigaSure™ Maryland (LF1937) ( $p < 0.001$ ). (145041-200629). **9.** Grasping force measured as the maximum amount of force required to pull porcine jejunum from the distal tip of device jaws. Comparison of ENSEAL® X1 Curved Jaw to LigaSure™ Maryland (LF1937) ( $p < 0.001$ ) (149828-200813). **10.** (093778-210601). **11.** (095323-210604).

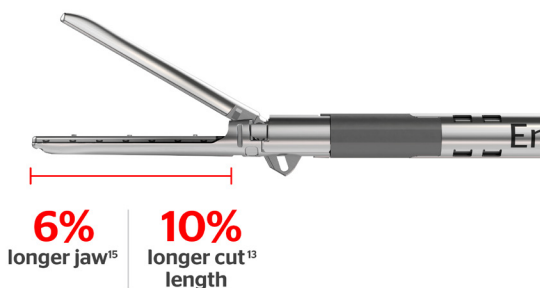
# ENSEAL® X1 Straight Jaw Tissue Sealer

## More efficient than LigaSure™ Blunt Tip<sup>12</sup>

- Can **capture more tissue** per bite with a longer jaw<sup>12</sup>
- **Transect more tissue** at a time with a 10% longer cut length<sup>13</sup>
- **360° continuous shaft rotation** to enable **easy access** to targeted tissue<sup>14</sup>



ENSEAL® X1 Straight Jaw can capture more tissue per bite with a longer jaw compared to LigaSure™ Blunt Tip<sup>15</sup>



ENSEAL® X1 Straight Jaw

LigaSure™ Blunt Tip



<sup>12</sup>. Based on metrology data, ENSEAL® X1 Straight Jaw Tissue Sealer has a 6% (or 11mm) longer jaw than LigaSure™ Blunt Tip (LF1837) (p < 0.001). (093775-210608). <sup>13</sup>. Metrology report comparing ENSEAL® X1 Straight Jaw to LigaSure™ Blunt Tip (LF1837) (p < 0.001). (093768-210608). <sup>14</sup>. (093778-210601). <sup>15</sup>. Metrology report comparing ENSEAL® X1 Straight Jaw to LigaSure™ Blunt Tip (LF1837) (p < 0.001). (093770-210608).

# ENSEAL® X1 Large Jaw Tissue Sealer



## More secure than LigaSure Impact™<sup>16</sup>

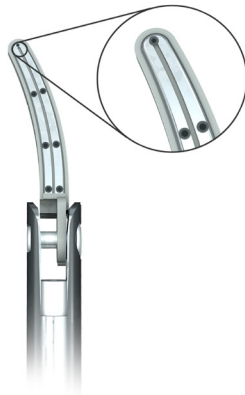
- Enabled **better sealing with less bleeding** at the distal tip<sup>16</sup>
- Had **41% less lateral thermal spread**<sup>17</sup>
- Has a **better design** with convenient controls and 360° rotation<sup>18</sup>

With a larger distal electrode surface area,<sup>19</sup> ENSEAL X1 Large Jaw had significantly less bleeding at the distal tip vs LigaSure Impact™ in thick tissue<sup>16</sup>

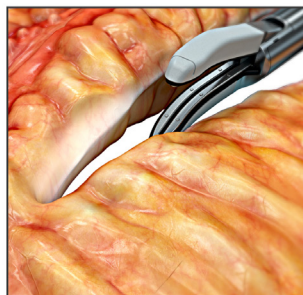
ENSEAL X1 Large Jaw



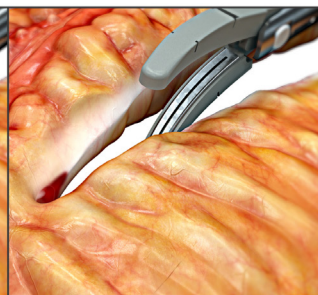
LigaSure Impact™



ENSEAL X1 Large Jaw



LigaSure Impact™



<sup>16</sup>. Preclinical test of distal tip bleeding (ENSEAL® X1 Large Jaw vs Impact-LF4318) in thick porcine mesentery base ( $p=0.001$ ). (093443-201029). <sup>17</sup>. Preclinical testing on porcine carotids (ENSEAL® vs Impact-LF4318) that measured mean max lateral thermal damage via histology ( $p=0.005$ ). (062746-180228). <sup>18</sup>. (059270-160831). <sup>19</sup>. (062722-161103).



# Expect more with ENSEAL® X1 devices

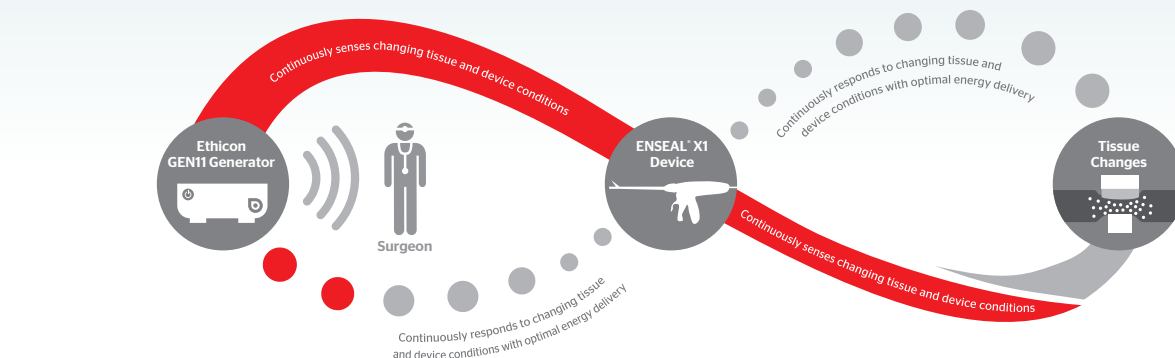
## Intelligent energy delivery

**Adaptive Tissue Technology**, powered by the Ethicon GEN11 Generator, uses an advanced algorithm for intelligent and efficient energy delivery. In ENSEAL® X1 devices, it continuously:

- **Senses** changes in tissue and device conditions
- **Responds** with the optimal amount of energy
- **Delivers** precision<sup>20</sup> and efficiency<sup>21</sup>

ENSEAL X1 Tissue Sealers produce **minimal lateral thermal spread**<sup>22, 23, 24</sup>

## The Intelligence of Adaptive Tissue Technology



## Advancing beyond secure sealing

- ✓ Seal vessels up to and including 7mm and lymphatics<sup>25</sup>
- ✓ Average burst pressure of more than 8x normal systolic<sup>26, 27, 28</sup>
- ✓ Silicone-coated jaws to reduce tissue sticking<sup>29</sup>
- ✓ Compared to LigaSure™ Maryland, ENSEAL® X1 Curved Jaw had 22% higher average burst pressures<sup>30</sup>
- ✓ Compared to LigaSure™ Blunt Tip, ENSEAL® X1 Straight Jaw had 19% higher average burst pressures<sup>31</sup>

**20.** Preclinical testing on porcine carotids (ENSEAL® vs Impact-LF4318) that measured mean max lateral thermal damage via histology ( $p=0.005$ ) (062746-180228). **21.** (061415-161010). **22.** Mean thermal spread measured via histology on porcine carotid arteries. Care should be taken near thermally sensitive tissues. See IFU for complete warnings and precautions. (095310-210202). **23.** Mean thermal spread measured via histology on porcine carotid arteries. (095309-200520). **24.** Preclinical testing in porcine carotids that measured mean max lateral thermal damage via histology. (062963-210728). **25.** (093781-210527). **26.** In benchtop testing on porcine arteries, average burst pressure was 1055 mmHg. (145156-200630). **27.** In benchtop testing on porcine arteries, average burst pressure was 1077 mmHg. (094359-210601). **28.** Benchtop testing on 1-7mm porcine splenic, thyrocervical and carotid arteries (mean burst pressure of 1400mmHg). (064971-191205). **29.** (095690-180724). **30.** Comparison of ENSEAL® X1 Curved Jaw to LigaSure™ Maryland (LF1937). Benchtop testing on porcine arteries (1055mmHg vs. 862mmHg,  $p < 0.001$ ). (145069-200629). **31.** Comparison of ENSEAL® X1 Straight Jaw to LigaSure™ Blunt Tip (LF1837). Benchtop testing on porcine arteries (1023mmHg vs. 863mmHg,  $p < 0.001$ ). (194427-211102).



# ENSEAL® X1 devices feature ergonomic engineering



- **Intuitive design**<sup>32</sup> with separate seal and cut functionality<sup>33</sup>
- **Conveniently placed control buttons** designed for less hand movement<sup>34</sup>
- **360° shaft rotation** designed to improve access to targeted tissue<sup>35</sup>

DESCRIPTION	PRODUCT CODE	SHAFT LENGTH (cm)	SHAFT DIAMETER (mm)	QUANTITY/SALES UNIT
ENSEAL X1 Curved Jaw	NSLX125C	25	5	3
ENSEAL X1 Curved Jaw	NSLX137C	37	5	3
ENSEAL X1 Curved Jaw	NSLX145C	45	5	3
ENSEAL X1 Straight Jaw	NSLX125S	25	5	3
ENSEAL X1 Straight Jaw	NSLX137S	37	5	3
ENSEAL X1 Large Jaw	NSLX120L	20	13	6

- ENSEAL X1 Curved Jaw, ENSEAL X1 Straight Jaw, and ENSEAL X1 Large Jaw are supplied sterile for single-patient use
- X1 Tissue Sealers are compatible with the Ethicon GEN11 Generator (software version 2016-1 or later versions)

## How to order

### Electronic ordering options

All purchase orders are made to Johnson & Johnson Health Care Systems, Inc. (JJHCS). The following electronic order placement methods are preferred:

- J&J Gateway ([www.jnjgateway.com](http://www.jnjgateway.com)) - For questions about your order, please visit the website or call 1-866-JNJ-GATE
- Electronic Data Interchange - JJHCS Help Line: 1-800-262-2888

### Non-electronic/Manual ordering options

JJHCS - Call 1-800-255-2500 between the hours of 8:30 am and 8:00 pm Eastern time, or fax your order to 1-732-562-2212.

## Customer support

For product use assistance, clinical guidelines, service and repair, emergency assistance, copy of 501(k) clearance letters, or complaints, please contact our Customer Service Support Center by calling 877-ETHICON (384-4266). Our support center is staffed 24 hours a day, 7 days a week by qualified nurses to answer your product-related questions.

**Visit [www.ENSEAL.com/X1](http://www.ENSEAL.com/X1) for more information about the ENSEAL X1 Tissue Sealers.**

For complete product details, see Instructions for Use available at [www.e-ifu.com](http://www.e-ifu.com).

32. (095687-210203). 33. (093782-210528). 34. (095686-210203). 35. (093778-210601).

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