

Value analysis brochure (VAB)

Powered by intelligence.



† Preclinical results may not correlate with clinical performance in humans.

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Technology overview

Firing that automatically adapts.

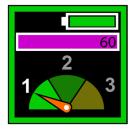
Adaptive Firing[™] technology offers a standardized approach to surgical stapling across tissue thicknesses.^{†,1,2}

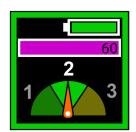
Why it's important:

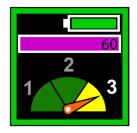
- Automatically slowing down firing speed when forces in tissue increase improves staple performance in challenging applications^{†,1,2}
- Adjusting the firing speed when forces are high results in:
- Reduced percentage of malformed staples by up to 84%^{†,1-3}
- More fully formed, B-shaped staples^{†,‡,2,5,6}
- Up to **21%** stronger, more secure staple lines^{†,1-3}

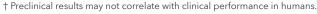
How it works:

- Initial firing speed is set based on forces that are measured upon clamping^{1,1-3}
- The Signia[™] stapler continuously measures force during firing and slows firing speed based on tissue variability and thickness to improve staple performance^{†,1,2}









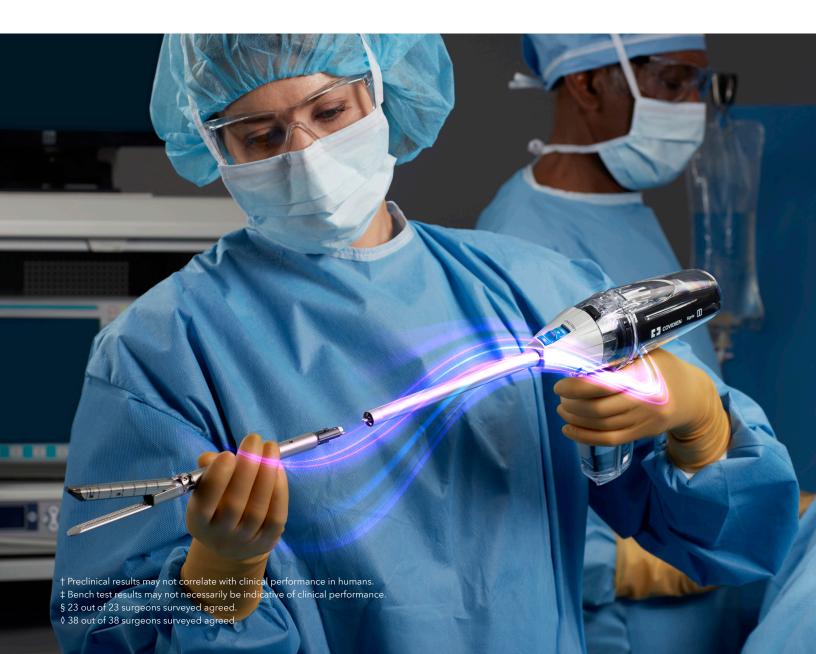
[‡] Compared to manual and fixed-speed powered staplers.



Senses. Measures. Informs. Adapts.

Experience the intelligence of the Signia $^{\text{M}}$ stapling system – a powered surgical stapler that senses tissue thickness and adjusts clamping force and firing speed in real time.

- Deploy Adaptive Firing[™] technology to sense tissue thickness and adjust firing speed accordingly^{†,1,2}
- Use force- and tissue-sensing technology to improve staple performance in variable tissue^{†,1,2}
- Get real-time feedback so you can make informed decisions regarding staple reload selection^{‡,7}
- Leverage an easy-to-read display screen §,8 to simplify setup and use $^{\lozenge,8}$





Forms the line. Holds the line.

Intelligence powers Signia[™] stapling – and Signia[™] stapling drives Tri-Staple[™] technology. The result is stronger, more consistent staple lines^{†,‡,3,9} that you and your patients can depend on.

 Maximize blood flow, §,10 maximize confidence in colorectal procedures

 Tackle variable tissue with confidence in bariatric surgery

 Manage stress, increase confidence in thoracic procedures

Backed by the benefits of Tri-Staple™ technology:

Superior performance^{†,0,11-15}
Greater perfusion^{§,10}
Less stress on tissue^{§,¶,14,16}



[‡] Compared to manual and fixed-speed powered staplers.

¶ Compared to Echelon Flex[™] green reloads analysis comparing different stapler designs, performance, and impact on tissues under compression using 2-D finite element analysis.

[§] Compared to flat-faced cartridges with single-height staples.

[♦] Bench test results may not necessarily be indicative of clinical performance. Compared to Ethicon Echelon Flex™.

Ergonomic ease. Clinical versatility.

By offering a powered handle with easy-to-reach push-button controls,^{†,8} plus a range of adapters and reloads to fit your specific needs, the intelligent Signia[™] stapling system is uniquely adaptable to your cases – and you.



Signia[™] power handle

The Signia[™] power handle is a reusable handheld battery-powered stapling handle. It includes a microprocessor, electronics, motors, an LCD display screen, and rechargeable lithium-ion batteries in a sealed packet.

Note: The power handle is a nonsterilized device that deactivates after reaching the end of its service life. It will not deactivate while in use.



Signia[™] power shell

The Signia™ power shell is a single-use, sterile control shell that covers and seals the nonsterile Signia™ power handle to create a sterile barrier, control interface, and universal adapter connection. It also provides a communications interface for Tri-Staple™ 2.0 single use reloads indicated for use with the stapler.

Precaution: The power shell is single use only.



Signia[™] linear adapters

Signia™ adapters are reusable instruments that connect with the assembled Signia™ power shell and power handle to enable functionality of compatible Medtronic stapling reloads. The adapters are composed of motormating connectors, sensor gauges, and device communications interfaces to provide communications between Signia™ and/or Tri-Staple™ reloads and the power handle. They are provided nonsterile and must be sterilized before use.

Note: The adapters are reusable devices that deactivate after reaching the end of their service life. They will not deactivate while in use.



Single-bay charger

The single-bay charger and power supply charges the power handle. It is a nonsterile part of the system.



Signia™ reusable insertion guide

The reusable insertion guide is used to help maintain the sterility of the Signia™ power shell during insertion of the nonsterile Signia™ power handle. It is provided nonsterile and must be sterilized prior to each use.

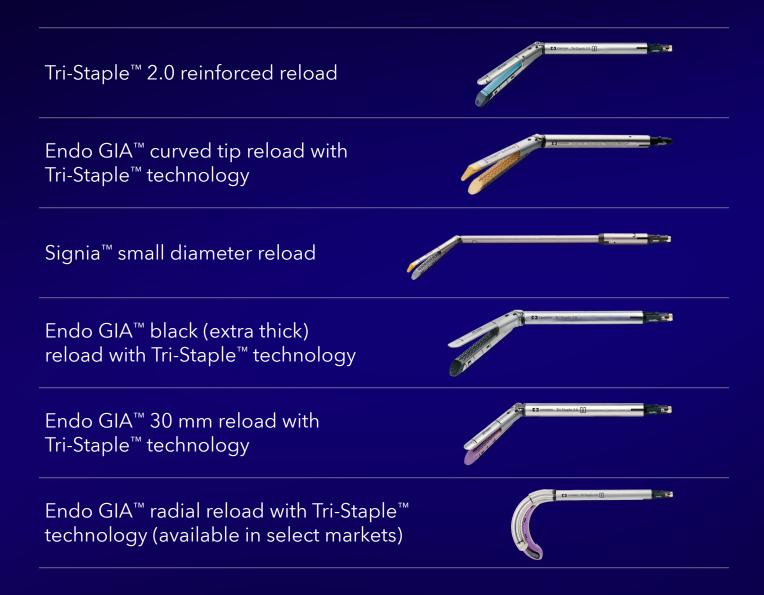


Signia[™] manual retraction tool

The Signia™ manual retraction tool is a reusable, handheld device that can be used to operate adapter controls in the event the stapler malfunctions during operation. The tool can be used to complete a firing, retract the knife and open the jaws, and/or articulate a stapling reload. It is provided nonsterile and must be sterilized before use.



Find the right reload for your case.



Thanks in part to its reposable platform, the Signia[™] stapling generates **53%** less medical waste than the SureForm^{™*} 60 stapler arm.¹⁷

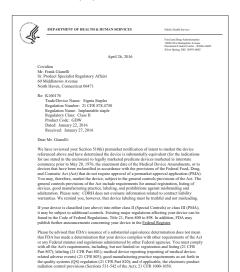
Competitive comparison

See the difference of powered intelligence.

Feature	Signia [™] stapling system	Ethicon Echelon Flex™ powered stapler	Ethicon Echelon™ 3000 powered stapler
Compatible with Signia [™] adapters, Signia [™] loading units, and Tri-Staple [™] 2.0 cartridges and reloads	✓	×	×
Single powered handle compatible with 30 mm, 45 mm, and 60 mm reloads	✓	×	×
Compatible with Tri-Staple™ technology	✓	×	×
Extra-thick reload options with tissue indications up to 3 mm	✓	×	×
Integrated real-time feedback display	✓	×	×
Compatible with Signia [™] small diameter reloads for 8 mm trocar access	✓	×	×
Features Adaptive Firing [™] technology	\checkmark	×	×
Power source	Lithium ion, 7.2 V, 2050 - 3000 mAhr	4 single-use batteries per handle, single use, disposable	4 single-use batteries per handle, single use, disposable
Reusability	Reusable, reposable system comprised of disposable and reusable components [†]	Single use, disposable	Single use, disposable
Points of articulation	Unlimited in either direction	3 points of articulation on each side (left, right)	Unlimited in either direction
Articulation	Powered	Manual; second instrument or lateral pressure against body structure	Powered
Rotation	Powered and manual	Manual only	Manual only
Clamping	Powered	Manual only	Manual only
Firing	Intelligent, powered	Fixed speed, powered	Fixed speed, powered
Jaw opening	Powered	Manual only	Manual only

[†] Power shell is single use

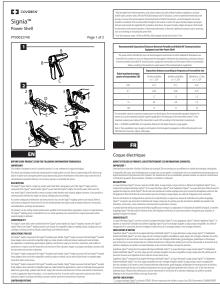
FDA 510(k) clearance letter



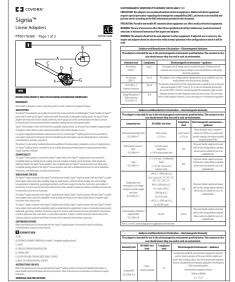
The 510(k) letter only confirms the device's legal market status in the U.S. and should not be interpreted as an FDA approval or endorsement of the product.

Instructions for use (IFU)











IFU images current as of 11/2024 when this brochure was approved by Medtronic. For the most current IFUs, please contact your sales rep.

Ordering information

Contact your Medtronic representative to bring the Signia $^{\text{M}}$ stapling system to your OR, and visit us at <u>Medtronic.com/covidien</u> to explore our full portfolio and reload options.

	Product code	Description	Quantity
	SIGPHANDLE	Signia [™] power handle	1
	SIGPSHELL	Signia [™] power shell	1
	SIGSBCHGR	Signia [™] single-bay charger	1
Sandana (COS)	SIGRIG	Signia [™] reusable insertion guide	1
	SIGMRET	Signia [™] manual retraction tool	1
	SIGTRAY	Signia [™] sterilization tray	1
	SIGPCORD1	Signia [™] power cord 1 – US	1
13 mm = 255 (1500)	SIGADAPTSTND	Signia [™] linear adapter (standard length)	1
100	SIGADAPTXL	Signia [™] linear adapter (XL length)	1
13 m m m m m m m m m m m m m m m m m m m	SIGADAPTSHORT	Signia [™] linear adapter (short length)	1



- evaluation. 2015.
- Based on internal test report #R2146-151-0, Powered stapling firing speed DOE analysis and ASA parameters. 2015.
- Based on internal report #RE00218740, Signia™ stapling adaptive firing technology data calculations and references. Aug. 7, 2019.
- Signia™ stapler [user manual]. North Haven, CT: Medtronic; 2023.
- 5. Based on internal test report #PCG-028, Signia™ stapling system competitive claims, March 27, 2017.
- Based on internal test report #PCG-032, Comparison of undercrimp staple measurement between Medtronic and Ethicon powered stapling platforms. May 10, 2018.
- Based on internal test report #RE00055515, Surgeon evaluation testing Signia™ stapling system sensing technology and real-time feedback. Aug. 4, 2016.
- Based on internal test report #RE00024826 rev D, Signia™ stapling system summative usability report. September 2016.
- 9. Based on internal test report #RE00147607, 4.5 mm round staple pull-apart analysis report. 2018.
- 10. Based on internal test report #2128-002-2, Final analysis of staple-line vascularity using MicroCT.
- 11. Based on internal test report #PCG-001, Tyvek pull-apart test comparing Echelon™ and Tri-Staple™ technology. March 2011.
- 12. Based on internal test report #PCG-004, Undercrimp comparisons in increasing pads of foam between Echelon^{™*} and Tri-Staple[™] technology. January 2012.
- 13. Based on internal test report #PCG-006, Staple formation comparison between Medtronic EGIA60AXT and Ethicon ECR60G in an ex-vivo tissue model. January 2012.
- 14. Based on internal test report #PCG-018, 2-D FEA of linear staplers. November 2012.
- 15. Based on internal test report #PCG-019, Comparative test of Endo GIA™ stapler using black reloads with Tri-Staple™ technology and Ethicon Echelon Flex™ black reloads. June 2014.
- 16. Based on internal test report #PCG-007 rev 1, Perfusion into Clamped Media. Sept. 2, 2011.
- 17. Based on internal report #PCG-040 rev A, Intuitive™ surgical robotics group vs. Ethicon™ stapler weights. October 2020.

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