

Proven clinical and economic outcomes from the industry leader in head and neck



- ✓ HARMONIC FOCUS® technology has been **evaluated in more peer-reviewed clinical articles** than LigaSure™ Small Jaw and LigaSure™ Exact combined²
- ✓ HARMONIC® technology, the **proven leader** in advanced energy with more than 22 million procedures worldwide.³

Enables precise energy delivery, efficiency and superior clinical outcomes¹

Speed	Hemostasis	Critical structures	Cost savings
Reduced total operative time by 31% ⁴	Reduced intraoperative blood loss by 45ml ⁴	Same nerve function following use at 2mm from sciatic nerve ⁵	Reduced total operative costs by 10% ⁶
			
31% (p<0.001)	45ml (p<0.001)	No difference	10% (p=0.007)
vs. conventional methods in thyroidectomy procedures			

¹ Based on a meta-analysis of HARMONIC FOCUS® (HF) versus clamp, cut and tie, where HF reduced OR time, intra-operative blood loss, length of stay and drainage volume (all p<0.001). Cheng et al. A systematic review and meta-analysis of Harmonic Focus in thyroidectomy compared to conventional techniques. Thyroid Research (2015) 8:15 ² As per a literature search conducted by Ethicon in Scopus between 01/01/2008 and 05/11/2016 ³ Internal global sales data as of June 2016 ⁴ Based on a meta-analysis of HARMONIC FOCUS® (HF) versus clamp, cut and tie, where HF reduced operative time (p<0.001) and intra-operative blood loss (p<0.001). Cheng et al. A systematic review and meta-analysis of Harmonic Focus in thyroidectomy compared to conventional techniques. Thyroid Research (2015) 8:15 ⁵ In a preclinical rat model that compared cold scissors, HARMONIC ACE*+, HARMONIC FOCUS*+ and monopolar electrosurgery (MES). Incision with cold scissors, HARMONIC ACE*+ and HARMONIC FOCUS*+ at 2mm from the sciatic nerve were not different via compound action potential (1621, 1519, 1803 mV-ms), conduction velocity (61.8, 62.3, 60.3 mm/ms), depolarization time (229.5, 211.6, 248.1 micro secs), repolarization time (2687, 2435, 2650 micro secs), vForce (20.2, 17.0, 19.1 g), dForce (24.0, 21.4, 27.7 g) and beta-APP (12.6, 18.1, 18.6 % incidence), respectively (p-value for all >0.05). At 2mm from the sciatic nerve, MES resulted in significantly slower conduction velocity (58.5 mm/ms), longer depolarization time (283.1 micro secs), longer repolarization time (415.0 micro secs) and higher incidence of beta-APP infiltration (31.8 % incidence) than cold scissors (p-value for all <0.05). (Note: p-values are comparison to cold scissors) ⁶ Cheng H et al. Hospital costs associated with thyroidectomy performed with a Harmonic device compared to conventional techniques: a systematic review and meta-analysis. J Med Econ. 2016 Apr 5:1-9. [Epub ahead of print]

HARMONIC FOCUS®+ Shears vs. LigaSure™ Small Jaw and Exact

The delivery of energy is key

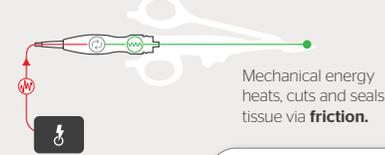
The effects of “radiated” electrical energy when activated 2mm from a nerve

Compared to LigaSure™ Small Jaw, in a preclinical rat model HARMONIC FOCUS®+ Shears exhibited:

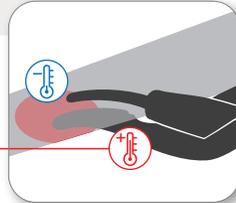
- 57% less nerve inflammation¹
- 50% less nerve damage²

How HARMONIC® technology works

Hand piece converts electrical energy to **mechanical energy**.

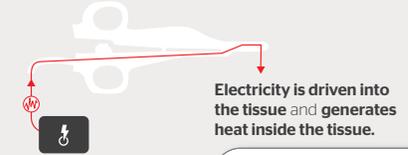


The heat starts in the blade and extends into the tissue, making the **blade hotter** than the tissue.

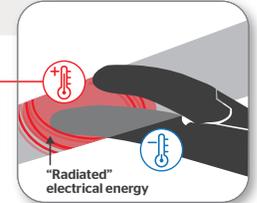


How ABP technology works

Electrical energy passes from active electrode to a return electrode.



The heat generated in the tissue extends to the device, making the **tissue hotter** than the device.



Designed for head and neck surgery

HARMONIC FOCUS®+ Shears were designed with a small profile to provide **precise dissection** and **delivery of energy in tight spaces**

HARMONIC FOCUS®+ Shears vs. LigaSure™ Exact

■ HARMONIC FOCUS®+ ■ LigaSure™ Exact

Active blade width



37% narrower³ active blade at the distal tip

Clamp arm width



10% thinner⁴ clamp arm at the distal tip

Jaw height



22% smaller⁵ jaw height at the distal tip

Jaw aperture



98% greater⁶ jaw aperture

The power of Adaptive Tissue Technology’s thermal management

Adaptive Tissue Technology enables more precise energy delivery and **improved temperature management⁷**



Comparison of the 20th consecutive transection on porcine jejunum.

20.0°C

200.0°C

No significant difference in clamp arm temperature between HARMONIC FOCUS®+ and LigaSure™ Exact.⁸

For more information, contact your local Ethicon sales professional or go to www.ethicon.com

¹ As exhibited in a preclinical rat model when activating 2mm away from the sciatic nerve. Inflammatory cell presence measured via H&E staining - 9.2% (HAR9F) vs. 21.4% (SJ), p=0.005 ² As exhibited in a preclinical rat model when activating 2mm away from the sciatic nerve. Mean nerve damage assessed as axonal transport impairment: 12.2% (HAR9F) vs. 24.3% (SJ), p<0.001 ³ Metrology study comparing the width of the distal end of the active blade for HARMONIC FOCUS®+ vs LigaSure™ Exact (1.37mm vs 2.19mm). ⁴ Metrology study comparing the width of the clamp arm at the distal end for HARMONIC FOCUS®+ and LigaSure™ Exact (1.98mm vs 2.19mm). ⁵ Metrology study comparing distal jaw height of HARMONIC FOCUS®+ vs LigaSure™ Exact (2.82mm vs 3.62mm). ⁶ Metrology study comparing the jaw aperture of HARMONIC FOCUS®+ vs LigaSure™ Exact (23.4mm vs 11.8mm). ⁷ vs. HARMONIC ACE® without Adaptive Tissue Technology ⁸ Benchtop thermal testing comparing HARMONIC FOCUS®+ and LigaSure™ Exact. No statistically significant difference existed (95% confidence interval for difference in median clamp arm temperature: -5.0 to 1.0 C°).