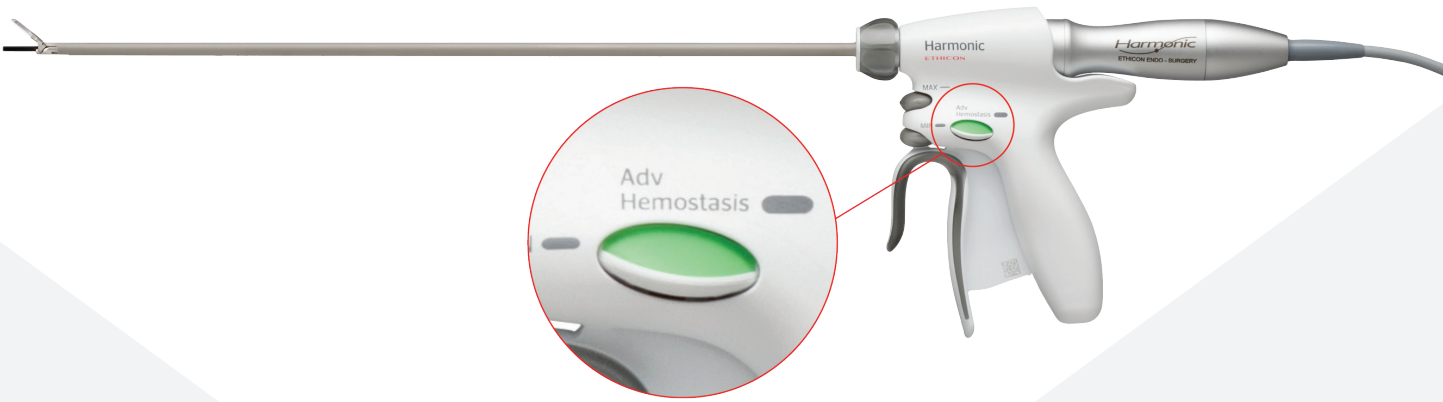
Harmonic®

Experience standard of **precision and performance** for your procedures



HARMONIC ACE®+ 7 Shears

VS.

Olympus Thunderbeat™

- ✓ Unites **precision** with **powerful sealing** ability
- ✓ Provides **more multifunctionality**, which may reduce the number of surgical devices needed during a procedure
- ✓ Adaptive Tissue Technology **delivers energy intelligently** and responds to changing tissue conditions

- ✗ **Does not offer ultrasonic only mode**
  - Limits multifunctionality
  - Restricted ability to back-score, use cavitation for tissue plane dissection, create otomies and spot coagulate
- ✗ **Does not offer secondary hemostasis and spot coagulation**
  - Advanced Bipolar energy can only be applied with the jaws closed

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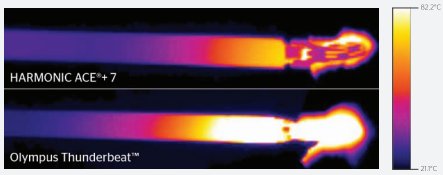
Shaping the future of surgery

HARMONIC ACE®+ 7 Shears VS. Olympus Thunderbeat™

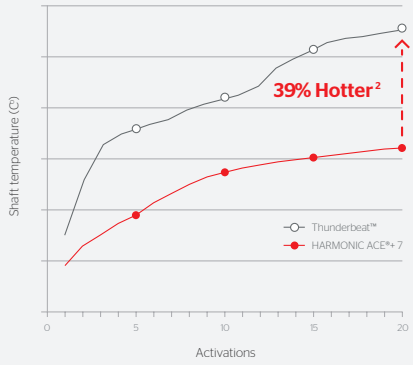
Heat and thermal management

The overall temperature profile of the distal shaft of **Thunderbeat is hotter**[1]

- HARMONIC ACE+ 7 provides superior heat management[1]—the distal part of the Thunderbeat shaft is 39% hotter.[2]
- HARMONIC ACE+ 7 has 27% less lateral thermal damage in MIN mode compared to Thunderbeat.[3]



Distal shaft temperatures

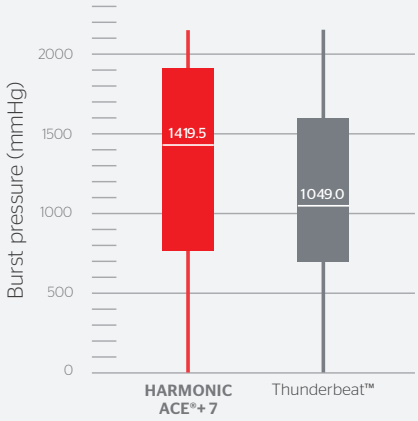


Seal quality and burst pressure

The overall quality[4] and **durability of seals produced with Thunderbeat is lower**

- HARMONIC ACE®+7 Shears delivers greater first pass vessel sealing than Thunderbeat[4]
- HARMONIC ACE+ 7 median burst pressure is 35% higher than Thunderbeat when sealing vessels 5–7mm in the Advanced Hemostasis mode.[5]

5-7mm vessel burst pressure[5]

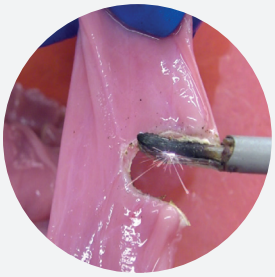


Reliability

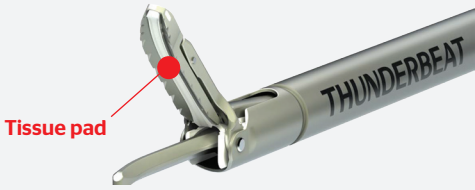
62.5% Thunderbeat instruments visibly sparked prior to an average of 112 cuts during testing[6]

- HARMONIC ACE+ 7 pad life is as much as 28x greater than that of Thunderbeat.[7]

Pad life testing



When the Thunderbeat pad breaks, you may generate sparking in the jaws



For more information, contact your local Ethicon Product Specialist

[1] In a benchtop study on porcine jejunum, Thunderbeat™ (Seal and Cut mode) exhibited 38.6% higher mean shaft temperature (Celsius) (vs. Ethicon ACE devices with Adaptive Tissue Technology at Max Power Level 5 (p<0.001). (C1935)

[2] In a benchtop study on porcine jejunum, Thunderbeat™ (Seal and Cut mode) exhibited 38.6% higher mean shaft temperature (Celsius) (vs. Ethicon ACE devices with Adaptive Tissue Technology at Max Power Level 5 (p<0.001). (C1934)

[3] In a preclinical study on ≤5mm porcine carotids in MIN mode vs. TB-0535FC (Seal and Cut Mode). Mean damage compared and determined via histology (p<0.001). (C1896)

[4] In benchtop test on 5-7mm porcine carotids comparing seal leaks at transection, HARMONIC ACE®+7 in Advanced Hemostasis mode (2/152 failures) versus Thunderbeat™ (5/78 failures) (p=0.046). Data on file (PRC064872B). (C1638)

[5] In a benchtop study with 5-7mm porcine carotids that compared median burst pressure, HARMONIC ACE® + 7 vs. Thunderbeat (Seal and Cut mode) (p=0.05). (C1871)

[6] In a benchtop study on porcine jejunum that compared HARMONIC ACE®+ (MAX mode only) vs. THUNDERBEAT (TB-0535FC) (n=8 for each group). Devices used per IFU until failure of pad. Cuts to failure for THUNDERBEAT: 57*, 70*, 90*, 140*, 150, 205*, 257, 270 (* denotes sparking at failure). No HARMONIC ACE®+ devices sparked. Data on file, Ethicon (PRC064789 & SCN033130C). (C1583)

[7] In a benchtop study on porcine jejunum that compared HARMONIC ACE®+ (MAX mode) vs. THUNDERBEAT (TB-0535FC; Seal and Cut mode) (n=8 for each group). Devices used per IFU until failure of pad (means: 1080 (+/-649) vs 155 (+/-82.3) (p=0.0005), respectively). Pad life for ACE+ was 112 cuts, vs 4 cuts for Thunderbeat via Weibull reliability analysis (99% reliability, 95% confidence; 112/4=28). The probability that ACE+ will last longer than Thunderbeat is 99.92% (p=0.0008), via reliability and life comparison in Reliasoft. Data on file, Ethicon (PRC064789 & SCN033130C). (C1678)

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072077-190507 | May 2019