



From Good to Great

Advanced Understanding of Orthopedic Instruments



BY RICK SCHULTZ

The use of sharp, well-functioning orthopedic instruments leads to safer and more efficient orthopedic procedures. The surgeon has more control and can cut more precisely when the instruments are sharp. Additionally, sharp orthopedic instruments last longer because less stress is applied on them during use.

Among the most common orthopedic instruments are osteotomes, chisels, gouges, single- and double-action rongeurs, bone- and pin-cutting forceps, and curettes. These instruments should be sharpened four to six times per year for optimum performance.

Read the following and then answer the five-question quiz to test your comprehension of the content and be entered for a chance to win a set of the author's Instrument Coaching Cards™. To submit your answers, see the instructions and QR code at the end of the quiz.

Q: What is the difference between an osteotome and a chisel?

A: Osteotomes are shaped like a steeple, while chisels have both an angled and straight side. (See **Figures 1 to 3**)

Osteotome Edge



Figure 1

Chisel Edge



Figure 2

Hibbs Osteotome and Chisel

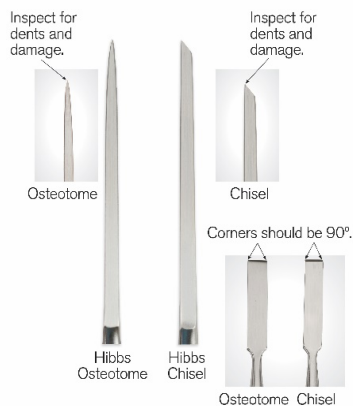


Figure 3

Q: How often should osteotomes and chisels be sharpened?

A: The devices should be sharpened at least four to six times per year depending on the usage, number of sets, and surgeon concerns.

Q: How many times can an osteotome be sharpened?

A: Osteotomes can be sharpened many times; however, it is important to note that, over time, sharpening will cause them to become shorter and thicker. A thick osteotome is a patient safety risk. During sharpening, a qualified and trained repair technician should measure the length and, if needed, recommend replacement.

Q: How are osteotomes measured?

A: The overall length is measured from base to tip in inches (e.g., 9"). The width of the cutting edge is also measured in inches (e.g., 1/2"). (See **Figure 4**)



Figure 4

Q: What are the most effective ways to protect osteotome tips?

A: Using tip protectors and osteotome protection cases helps prevent damage to the cutting edges.

Q: How is the size of an orthopedic rongeur measured?

A: The length and width of the cup jaw is measured in millimeters (mm). (See **Figure 5**) In addition, the overall length of the instrument is measured from proximal end to distal tip.

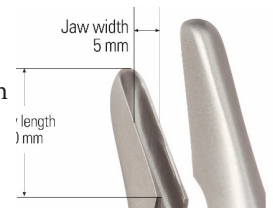


Figure 5



Q: What is the standard sharpness test for rongeurs, pin cutters and bone cutters?

A: The sharpness of rongeurs and bone cutters is tested on one thickness of an index card or card stock. (See **Figures 6 and 7**)



Figure 6

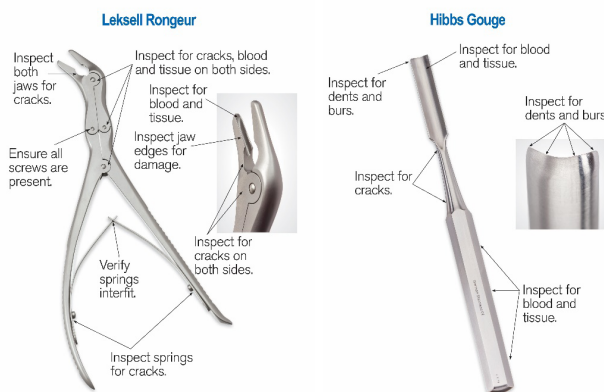
Figure 7

Q: Can a dented or damaged jaw of a bone cutter or rongeur be sharpened?

A: A dented or damaged jaw can be sharpened by a well-trained repair technician—unless the dent or damage is severe. Devices with severe dents or damage should be replaced.

Q: How often should rongeurs be sharpened?

A: A good benchmark for rongeur sharpening is four times per year, but it can be more or less frequent based on usage and surgeon satisfaction. Before sharpening, the repair vendor should test each instrument to confirm dullness.



Figures 8 and 9: Inspection points for a Leksell rongeur and Hibbs gouge

Quiz

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Please answer the five true-and-false (T/F) questions.

1. An osteotome can be sharpened many times. T/F
2. A chisel is shaped like a steeple. T/F
3. A severely dented jaw of a bone cutter can be repaired by a trained repair technician. T/F
4. A rongeur should be sharpened approximately four times per year. T/F
5. Repeated sharpening of an osteotome does not change its size or shape. T/F

Scan this QR code to submit your answers online. The deadline to submit is August 9, 2024. All participants' names will be entered into a drawing to win a set of Instrument Coaching Cards™. Good luck!



RICK SCHULTZ, the Instrument Whisperer™, is an author, inventor, lecturer, and the retired Chief Executive Officer of Spectrum Surgical Instruments Corp. He served as contributing editor of HSPA's *Central Service Technical Manual* (fifth, sixth, seventh and eighth editions). Schultz authored the textbooks *Inspecting Surgical Instruments: An Illustrated Guide* and *The World of Surgical Instruments: The Definitive Inspection Textbook*, which was released in June 2018. In October 2021, Schultz published the veterinary medicine textbook *The World of Surgical Instruments for Animal Health*. Schultz was named HSPA's Educator of the Year in 2002 and the American Hospital Association Educator of the Year in 2006. In 2007, he was named by *Healthcare Purchasing News* as one of the 30 Most Influential People in Healthcare Sterile Processing. Schultz currently provides educational lectures to Sterile Processing professionals at HSPA's annual conferences and conducts Operating Room personnel lectures across the country.

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