Bone Quality Indenter

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Exactech® Surgeon focused. Patient driven.™

Motivation

During total shoulder arthroplasty surgeons use a qualitative “thumb test’ to determine the type of implant that is best for the patient. Lack of a consistent standard leads to inconsistencies in treatment and results.

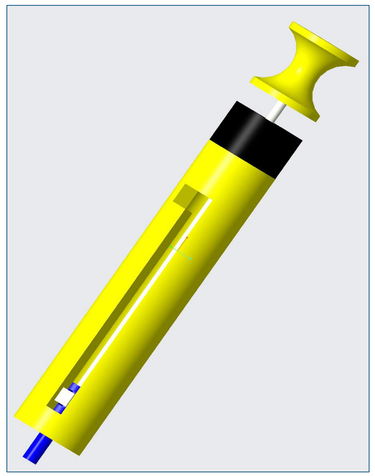
Objectives

The objective of this project is to create a device that can help surgeons choose between a stemmed and stemless implant during total shoulder arthroplasty.

Stemmed Implant

Stemless Implant

Current Design



Targets

- Device withstands temperatures up to 140 ° C
- Width of device is smaller than 16 cm
- Creates indentation less than or equal to 2 cm
- Reports results with 95% accuracy
- Lifespan greater than 50 uses

Steps

- Pull handle to compress spring
- Place device against humorous
- Turn handle to release spring
- Remove device
- Measure indentation with gauge

Next Steps

- Compression testing of saw bone blocks
- Picking a mechanical amplifier
- Calculate necessary spring coefficient
- Machining first prototype