



CROSS SECTIONAL TISSUE SCANNING DEVICE



PROBLEM:

The top-ranked hospital for Orthopedics in the U.S. required a non-contact scanning device to cylindrically map cross sections of ligaments and tendons while simulating in-vivo loads. The project had to be developed within the constraints of a fixed-cost research grant.

SOLUTION:

JAKTOOL employed high precision non-contact scanning lasers, partnering with KEYENCE to implement their top-tier technology. Novel non-destructive, self-aligning grippers to fixate the tissue were developed in-house. Clever use of ball spline technology allowed vertical translation of the gripper without rotation. JAKTOOL also developed a method to measure the rotational angle of the displacement sensor, as well as sensor height relative to the specimen, so scans could be taken at varying heights without repositioning the specimen.

CONCLUSION:

Working closely with research scientists, JAKTOOL took a simple schematic and designed, manufactured, and delivered a truly unique turn-key device exceeding customer's requirements of time, budget, and precision.