

Portfolio

# Cirq robotics in Spinal Procedures



Cirq enables modular robotic solutions, which provide accuracy and support the surgeon in many applications. Each solution consists of the base module Cirq Arm System and an application specific application module. Through this modular approach, the same base module addresses different use cases like stationary instrument holding, complex spine surgery, precise stereotactic surgery and cranial biopsies.



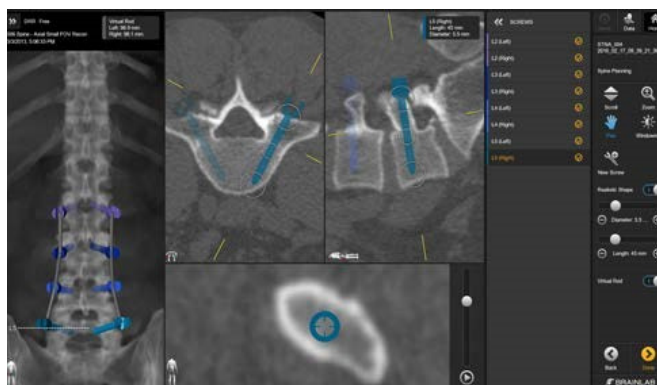
### Cirq Instrument Holder Module

- Seamless workflow with navigation-ready instruments including tissue protecting trocar for minimally-invasive surgery
- Provides stable procedure support when instruments are locked in place after alignment and uses sharp teeth to anchor on the bone
- Separates the tasks of trajectory alignment and drilling by providing a stable working channel after locking the position
- Vendor-neutral compatibility with multiple implant sets
- Mainly reusable components keep disposable costs per case to a minimum

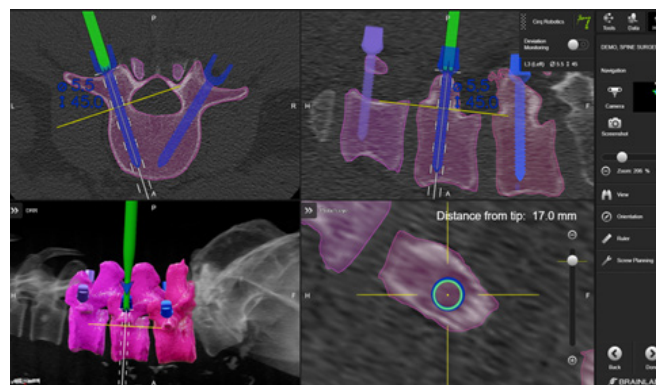


### Cirq Robotic Alignment Module for Spine

- Automatic alignment to planned screw trajectory after manual arm positioning
- Cirq Alignment Software Spine provides visual guidance towards region of interest
- Real-time tracking of instruments and adjustable deviation warning allows full control during drilling
- Drill guide teeth designed for forceless anchoring on the bone
- Drill guide length suitable for various patient anatomies
- Four-marker patient and instrument arrays ensure robust tracking
- Alignment software seamlessly integrates into the navigated workflow



Elements Spine Planning software with automatic pedicle screw positioning



Cirq Alignment Software Spine seamlessly integrates with Spine & Trauma Navigation