19 Quick Change Instrument for Interfixated Spinal Cage Testing

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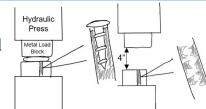
School of Biomedical Engineering, Science and Health Systems

SeaSpine



Need and Objective: Reduce delays in spinal implant testing

- Spinal implants tested for FDA clearance
- Mangled plastic inserts in metal load blocks require removal after testing
- Current removal process damages blocks and costs \$1500 monthly



Objective: Remove plastic pieces from the metal block without causing any damage to the test block

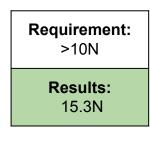
Design Inputs:

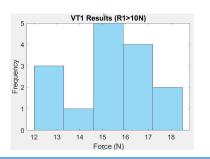
- 1. Fit within the 14" space between the two loading blocks
- 2. **Remove** the plastic insert in <5 mins, avoid further delays
- 3. 10N vertical force needed to remove plastic insert

Testing Results

Maximum Force Applied (R1): Find the maximum vertical force applied before detachment

R1 is met; Average Applied Force >10N





Solution

1. Press button 2. Shaft moves down 7" Solution removes the plastic pieces

Future

Impact: This device allows for faster product development, more spinal implant options available to the public. Future Plans: Machine device from aluminum and identify how to use the device at different angles.