

## 1. Background and design issues



Figure 1.1: Rib Fractures

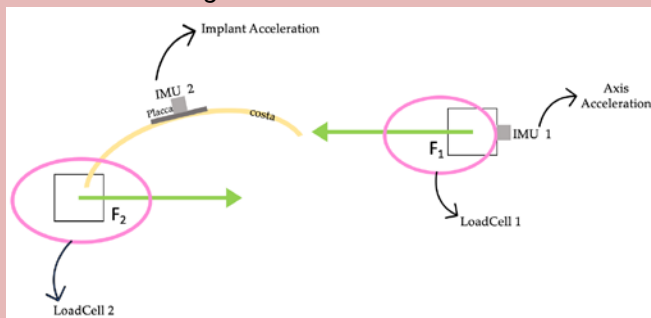


Figure 1.2: TEMARI testing machine scheme

## 4. Prototype and Test



Figure 4.1: The prototype.

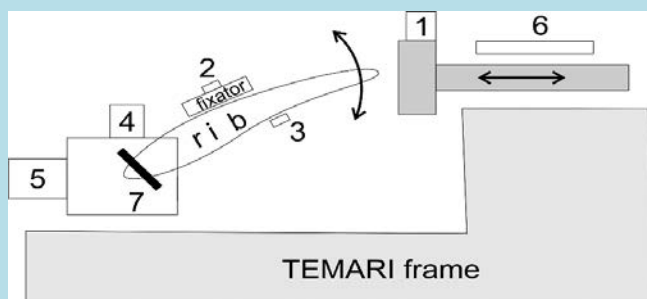


Figure 4.2: Testing machine functioning.

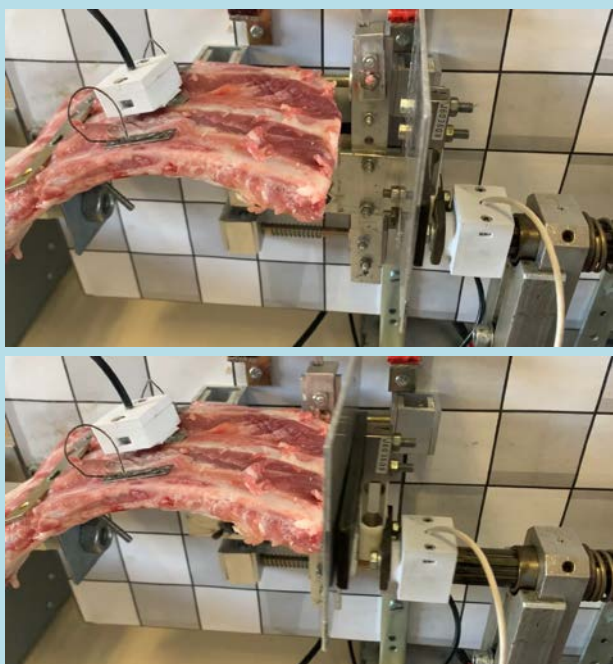


Figure 4.3: Snapshots during the testing rib on TEMARI.

## 2. Design Proposal and Modeling

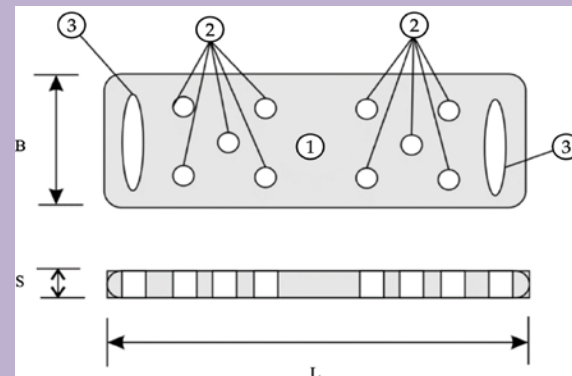


Figure 2.1: Conceptual design of the fixator.

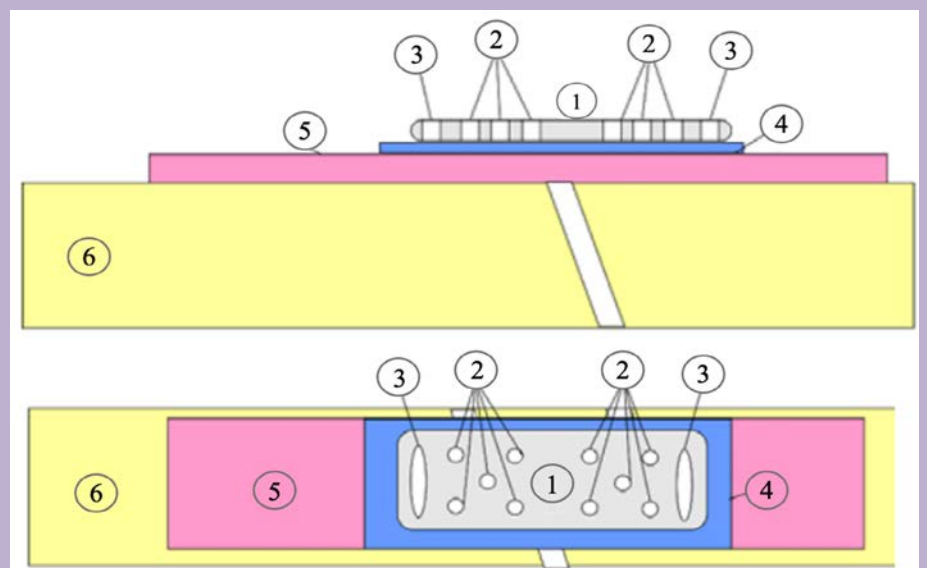


Figure 2.2: Fixator design scheme.

## 3. Performance and Results

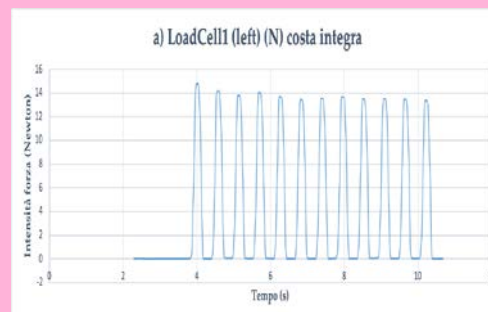


Figure 3.1: Load cell 1 intact rib.

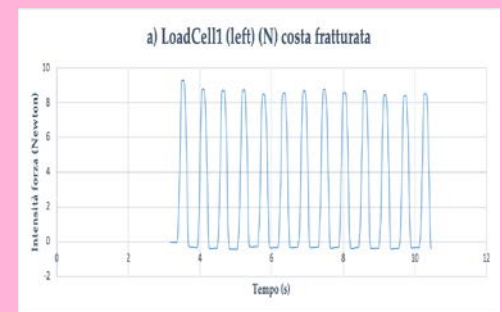


Figure 3.2: Load cell 1 fractured rib.

### CONCLUSIONS:

La protesi RIBOLUTION è un nuovo sistema di osteosintesi costale mininvasivo, in grado di assicurare fissità dei monconi ossei ed allo stesso tempo permettere i movimenti delle coste, per evitare complicanze correlate alla loro immobilizzazione. Esperimenti in termini di biomeccanica e bioassorbibilità clinica hanno dimostrato come questo sistema sia potenzialmente in grado di resistere alle forze fisiologiche che esistono all'interno del torace.