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Ilizarov hinges for acute deformity correction and fracture reduction

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Professor

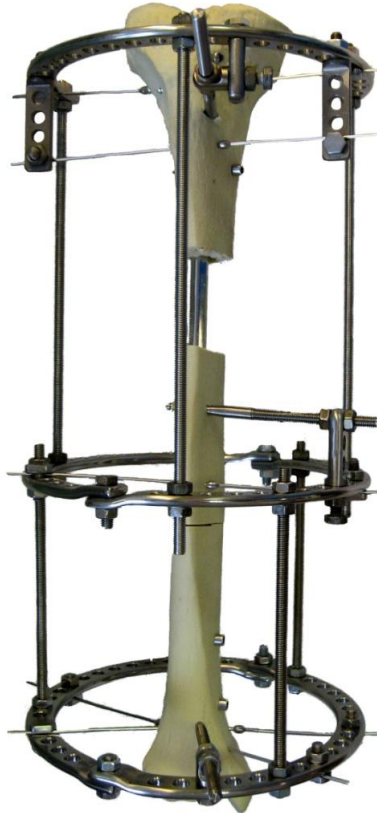
«Basic principles of external skeletal fixation. Temporary fixation and treatment of fractures according to Ilizarov»
St.Petersburg, 2022

Principal types of frame assembling

for fracture
healing



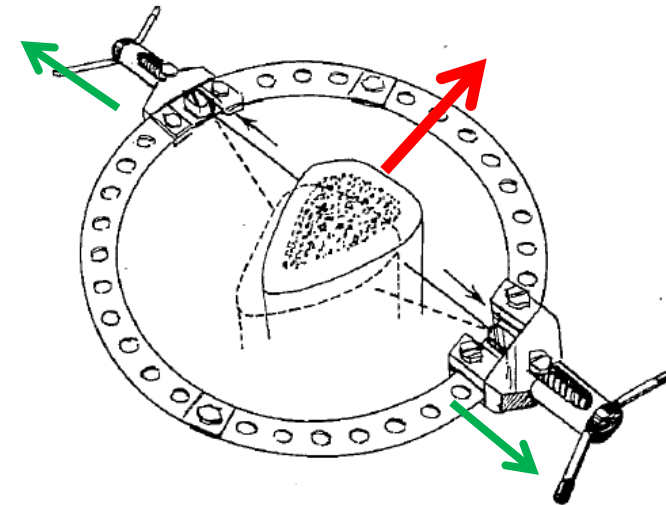
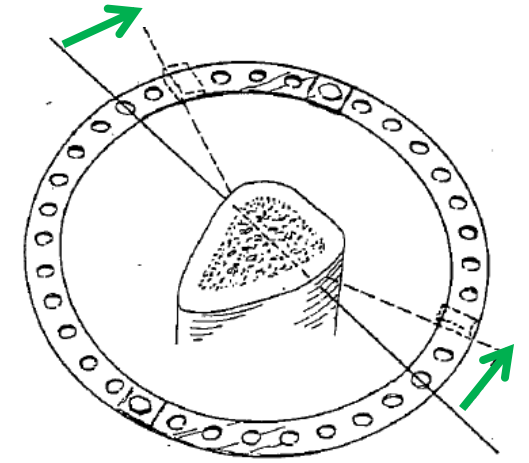
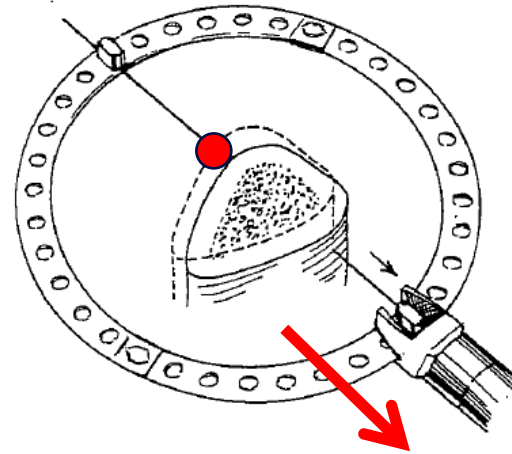
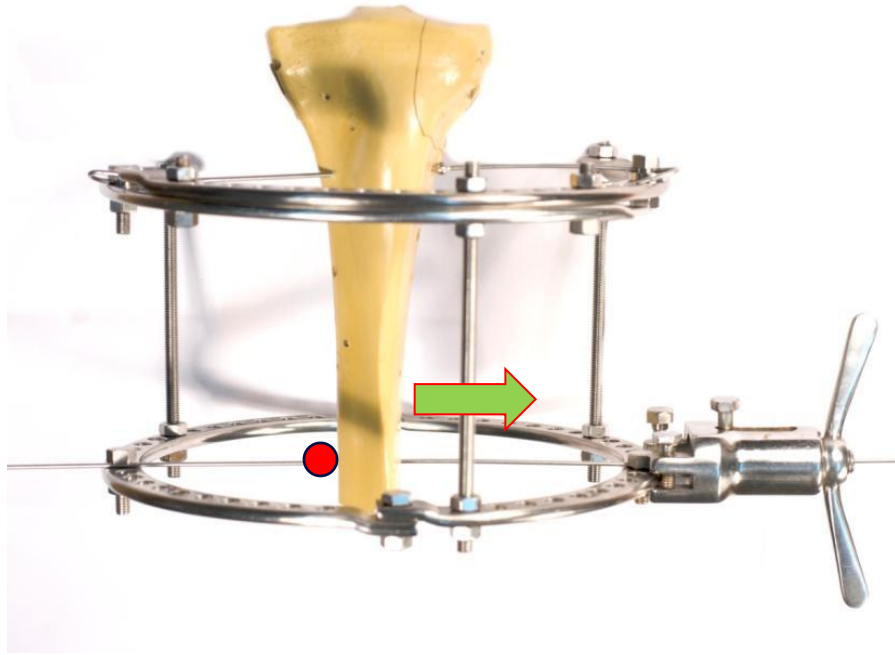
for bone
transport



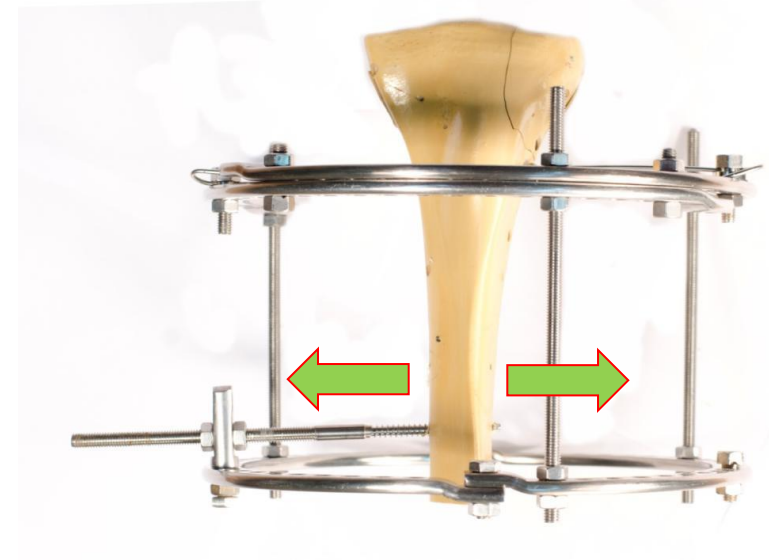
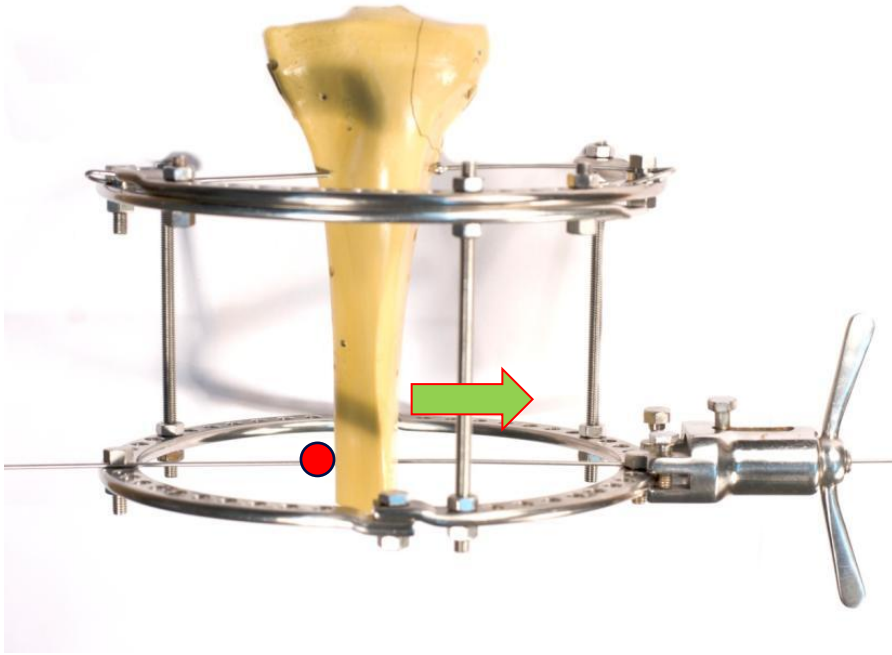
for deformity
correction



Bone fragment reduction: inside of the frame



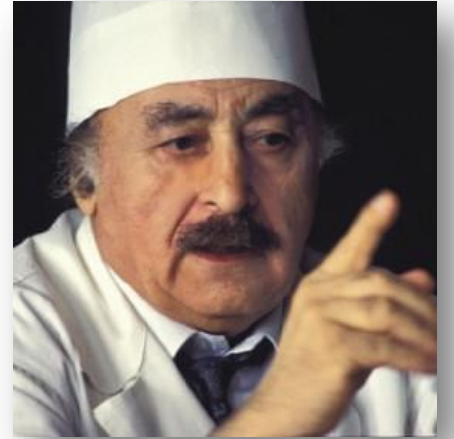
Bone fragment reduction: inside of the frame



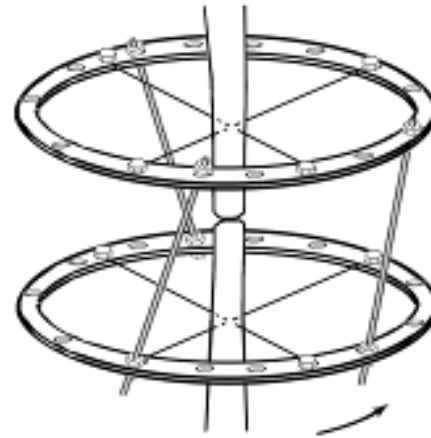
“Short” bone fragment: Ilizarov reduction “inside the frame” is impossible



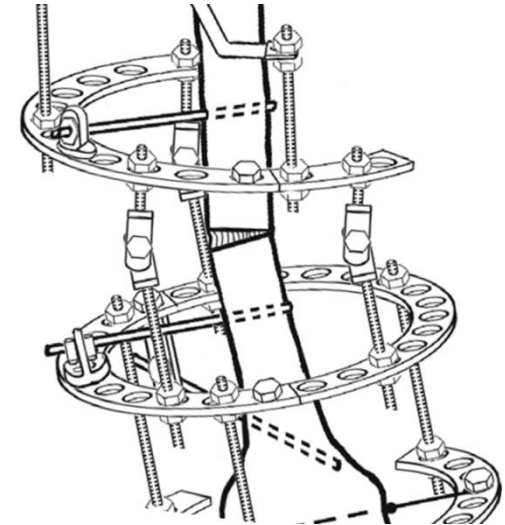
Ilizarov hinges for **acute** correction



translation

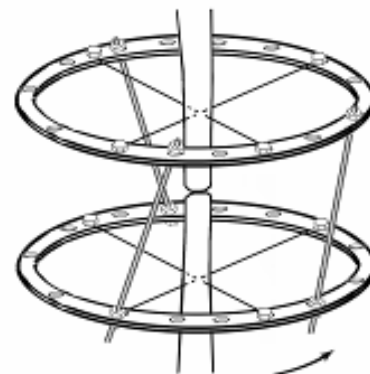


rotation

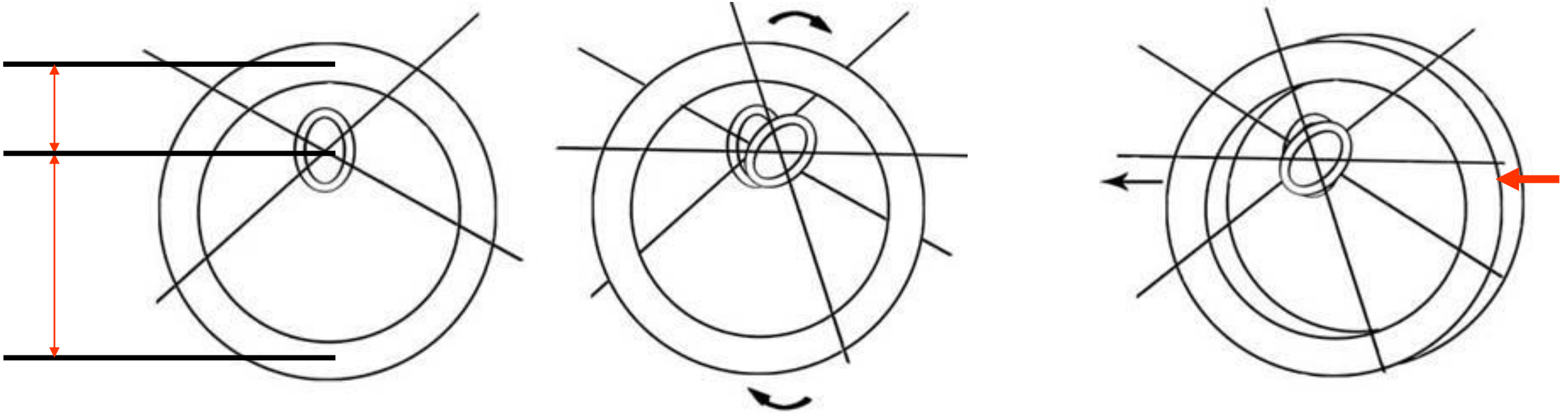


angulation

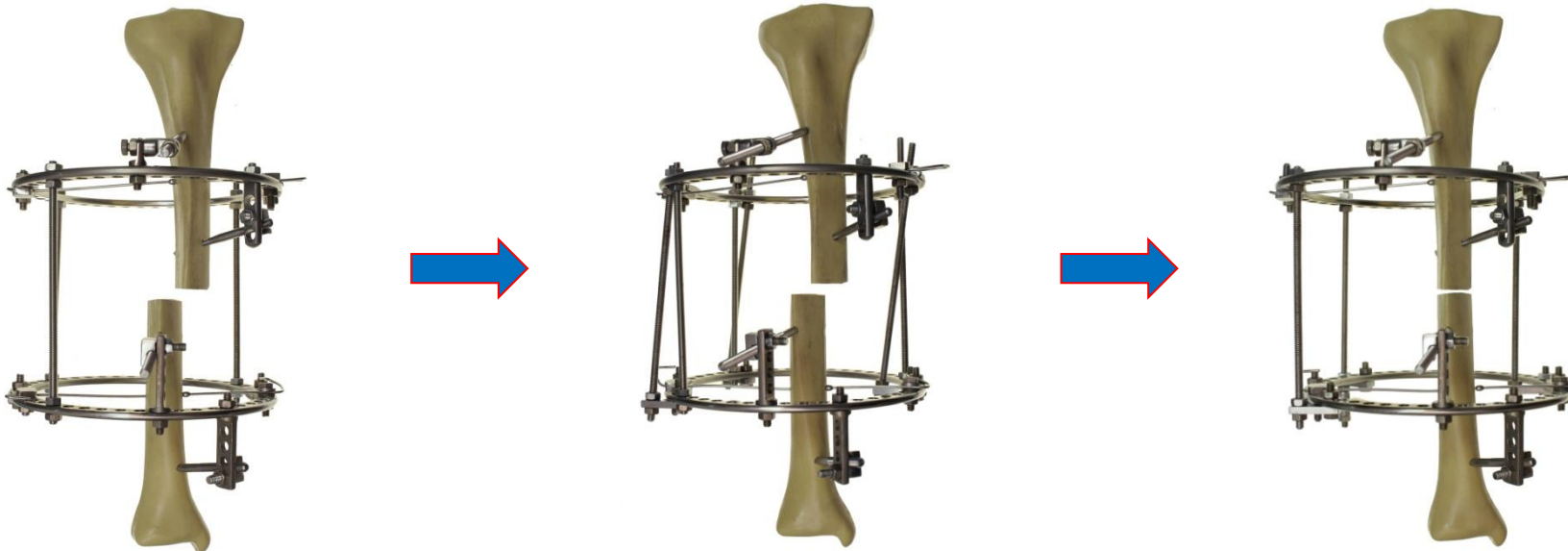
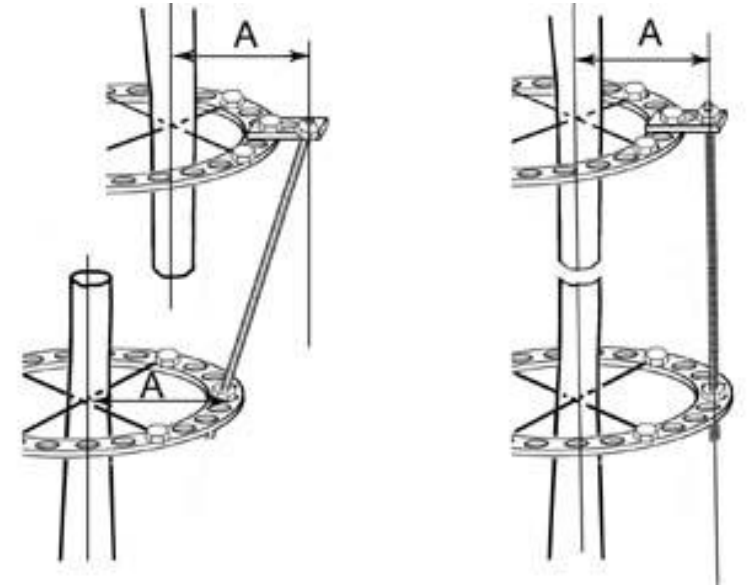
Ilizarov hinge for acute correction: rotation



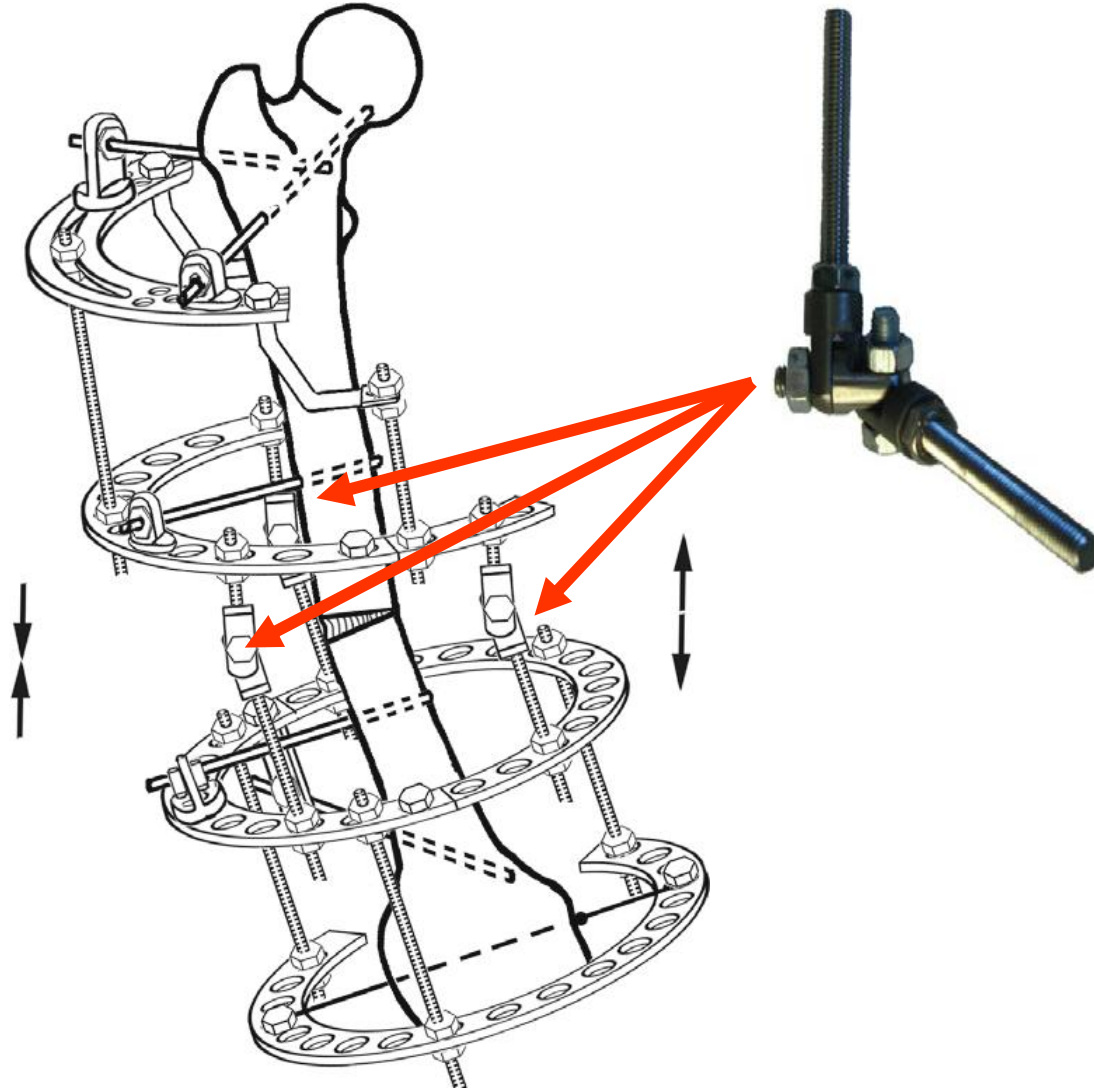
Ilizarov hinge for acute correction: rotation → translation



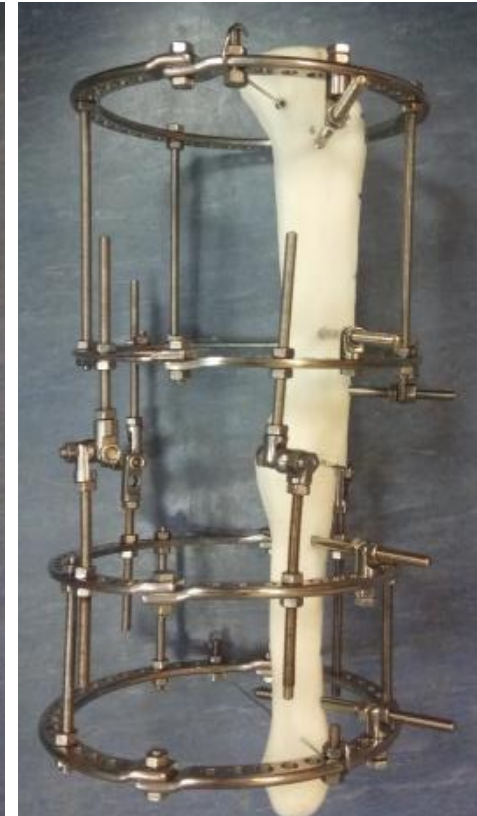
Ilizarov hinge for acute correction: translation



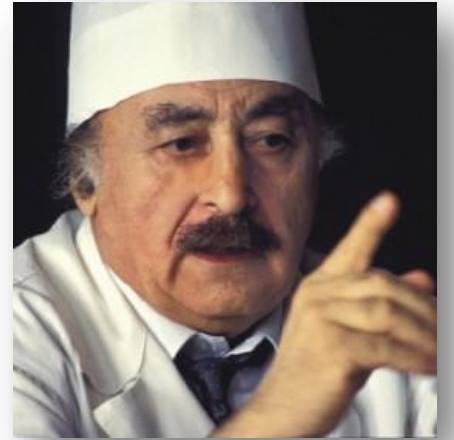
Ilizarov unit for angulation correction: “virtual” hinge



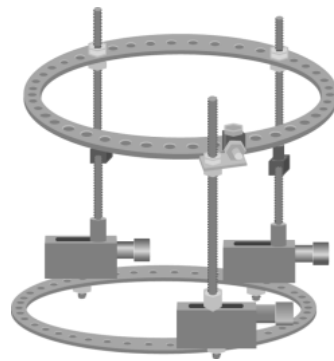
Ilizarov unit for angulation correction: “virtual” hinge



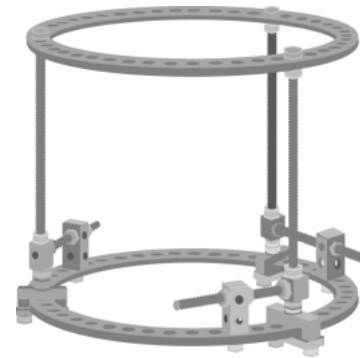
Ilizarov hinges for **gradual** correction



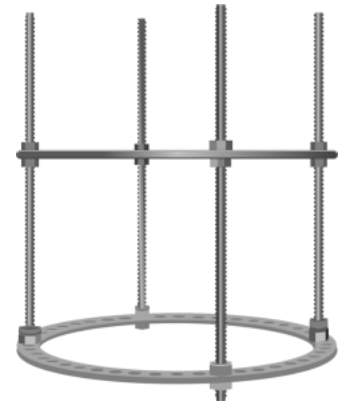
angulation



translation



rotation



lengthening

Take home message

- Ilizarov hinges provide possibility for acute bone fragment reduction and deformity correction
- Reduction units mounting requires precision, accuracy and is not a routine procedure