

Magnetic Expansion Control (MAGEC) Master Technique

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MAGEC™ SYSTEM

- Titanium Rod Implant
- External Remote Controller (ERC)



MAGEC™ ERC

- EXTERNAL REMOTE CONTROLLER



MAGEC™ ERC



ERC2 Proper Patient Positioning

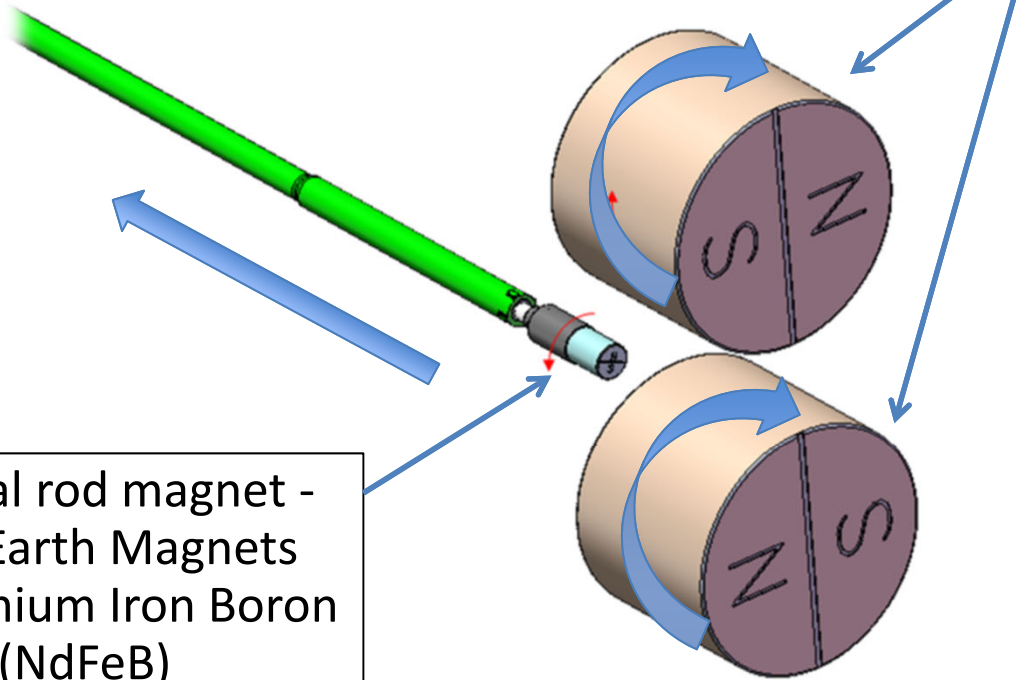


MAGEC™ ERC

Rotational force of the internal turning magnet creates an axial force on the lengthening rod

ERC - Rare Earth Magnets
Neodymium Iron Boron (NdFeB)

Internal rod magnet -
Rare Earth Magnets
Neodymium Iron Boron
(NdFeB)



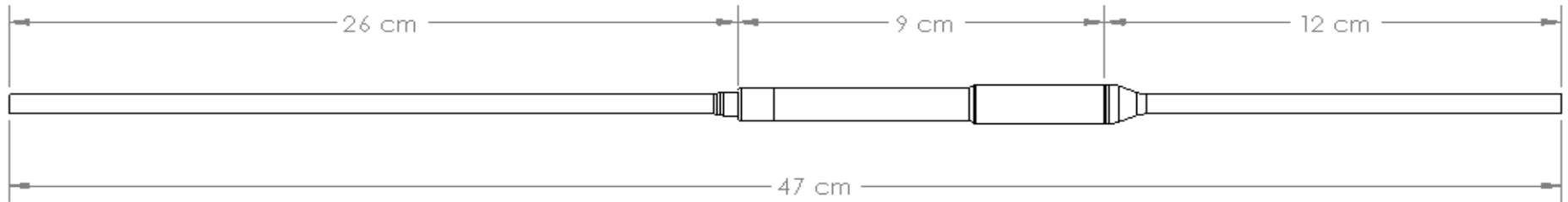
MAGEC™ IMPLANTS



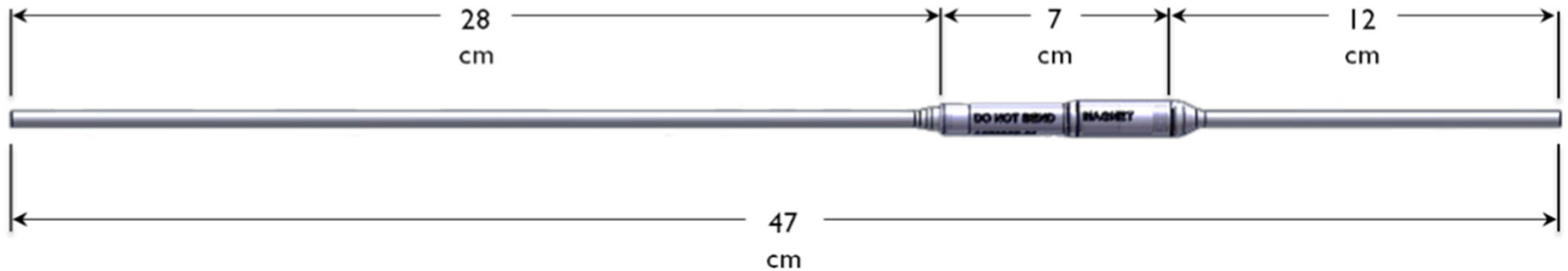
- 4.5mm and 5.5mm Diameter
- Anchored with compatible sized screws and hooks

MAGEC™ IMPLANTS

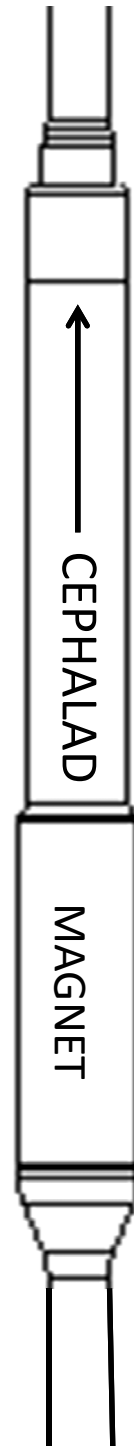
90mm Actuator Rod – 48mm distraction capability



70mm Actuator Rod – 28mm distraction capability



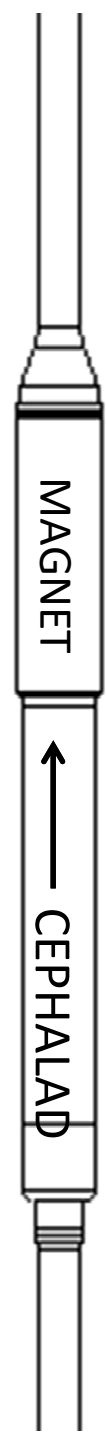
Single Rod Construct



STANDARD ROD

Dual Rod Construct

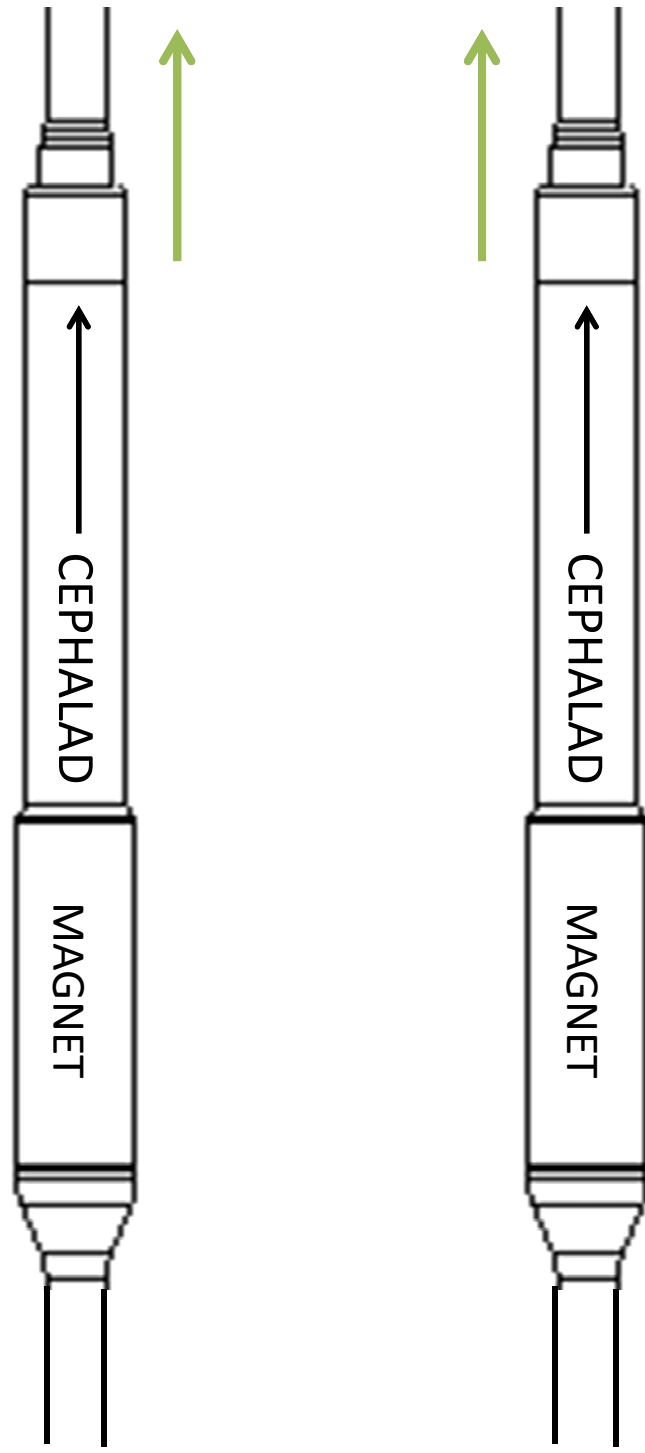
OFFSET ROD



STANDARD ROD



Dual Rod Construct



2 STANDARD RODS

Surgical Technique

- Standard approach
- Prepare the sub-muscular bed
- Insertion of anchors
 - Proximal – Screws and/or hooks
 - Distal – Screws
- Rod cutting and contouring – cannot bend the actuator portion of the rod



- Manual test distraction before implantation
- Placement of one cross connector

Manual Test Distraction

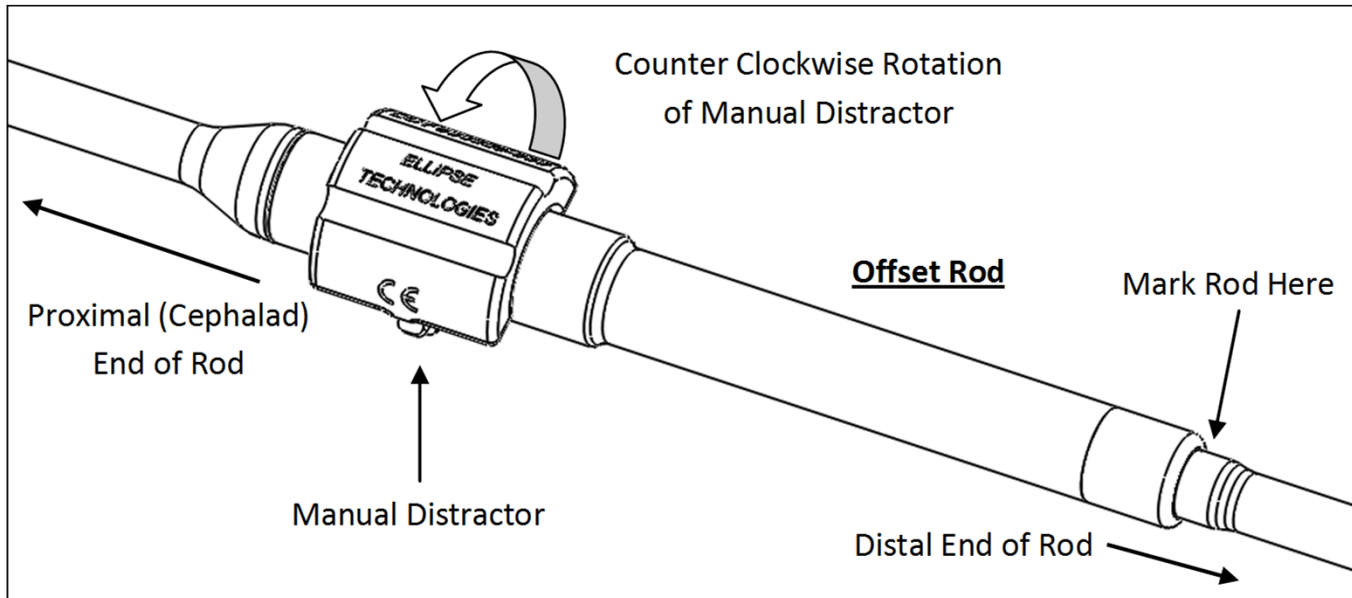


Figure 1 Manual Distracting Test for **Offset** Rod

Sterilization Recommendations:

The MAGEC™ Manual Distractor has been qualified in a double wrapped configuration (Cardinal Health Converters Bio-Shield Regular Sterilization Wrap, 40" x 40", REF 4040) using the following autoclave sterilization cycle:

Manual Distractor

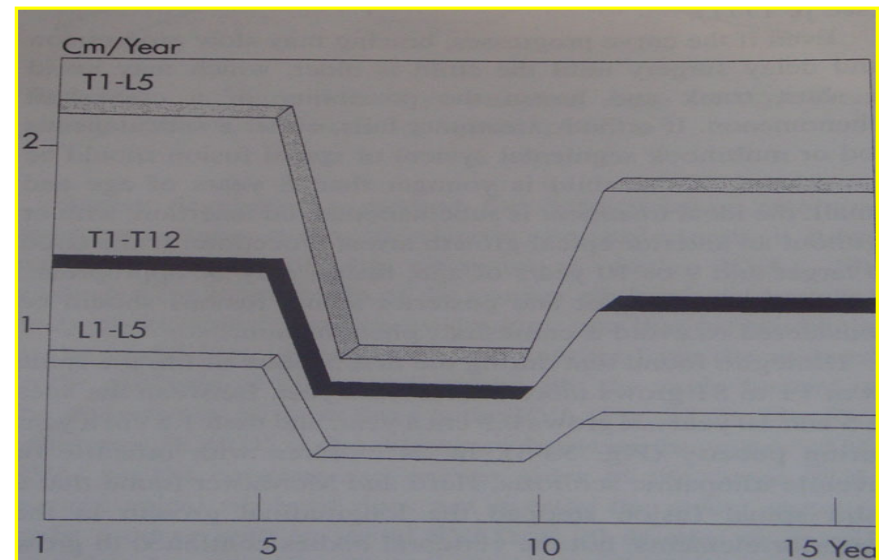


Distraction Techniques

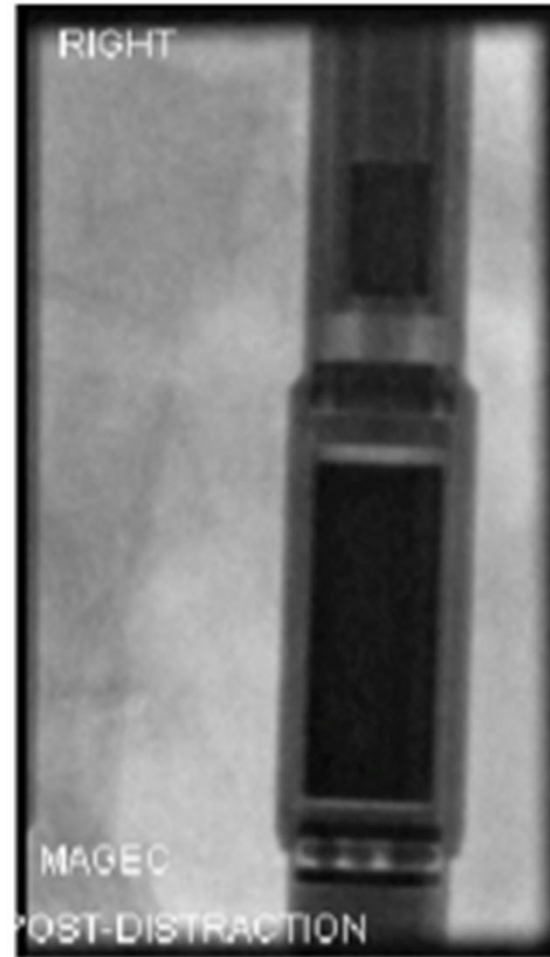
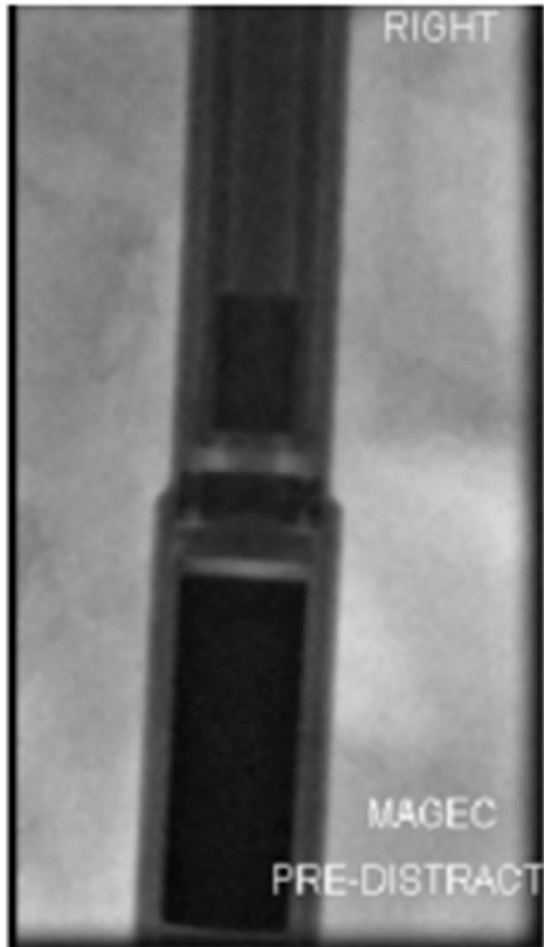
- Outpatient clinic setting
- Clunking vs Non-Clunking
- Vast range of opinion surrounding frequency and technique of distraction
 - Kenneth Cheung, Hong Kong – 1/12
 - Hilali Noordeen, RNOH Stanmore – 6/12
 - Colin Nnadi, Oxford - Tail-gating – Dimeglio's growth curve
- Flouro technique – 40-50x less radiation (Ability to assess integrity of anchor points and rods)

Dimeglio Spinal Growth Velocity – (T1-L5)

- ‘Tail-gating’ Principle
- Birth-5 years - Less than 20kg – 2.2cm per annum
- 5-10 years – 20-30kg – 1.1cm per annum
- Harnessing natural growth
- Less stress on anchor points
- ‘Controlled’ distraction
- ‘Scientific’ approach



Fluoro Images



Ultra Sound Distraction Measurement Landmarks

