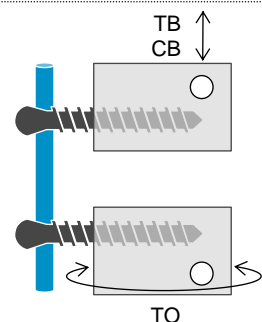


# Summary of the most commonly used test methods

## Part 1 - Spinal fixation devices

- Internal fixators (screw-rod-systems, transverse connectors, hooks, etc.)
- Anterior spinal plates



- Static compression bending (S-CB)
- Dynamic compression bending (D-CB)
- Static torsion (S-TO)
- Static tension bending (S-TB)

### ASTM F1717

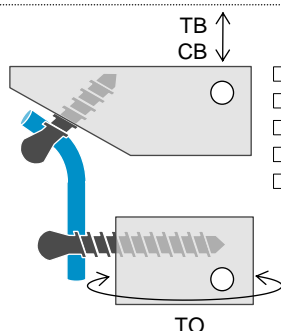
Standard Test Methods for Spinal Implant Constructs in a Vertebrectomy Model

#### Scope

Static and dynamic fatigue testing of spinal fixation devices in a vertebrectomy model

#### Spinal region

lumbar, thoracic, cervical



- Static compression bending (S-CB)
- Dynamic compression bending (D-CB)
- Static torsion (S-TO)
- Dynamic torsion (D-TO)
- Static tension bending (S-TB)

### ASTM F2706

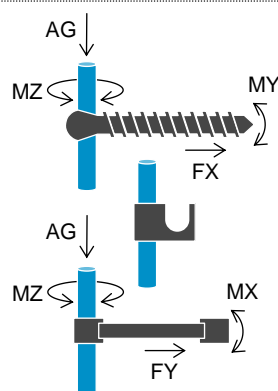
Standard Test Methods for Occipital-Cervical and Occipital-Cervical-Thoracic Spinal Implant Constructs in a Vertebrectomy Model

#### Scope

Static and dynamic fatigue testing of spinal fixation devices in a vertebrectomy model

#### Spinal region

occipital-cervical-thoracic



Selection also depends on whether screws, hooks, bands or transverse elements are tested:

- Static axial gripping (S-AG)
- Static flexion-extension (S-MY)
- Dynamic flexion-extension (D-MY)
- Static torsion (S-MZ)
- Dynamic torsion (D-MZ)
- Static transverse moment (S-MX)
- Dynamic transverse moment (D-MX)
- Static anterior-posterior load (S-FX)
- others

### ASTM F1798

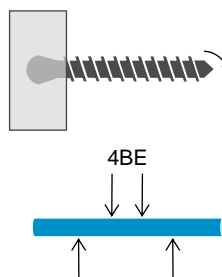
Standard Guide for Evaluating the Static and Fatigue Properties of Interconnection Mechanisms and Subassemblies Used in Spinal Arthrodesis Implants

#### Scope

Static and dynamic fatigue testing of subassemblies of spinal fixation devices

#### Spinal region

lumbar, thoracic, cervical



#### Screws

- Static bending (S-BE)
- Dynamic bending (D-BE)

#### Rods

- Static 4-point-bending (S-4BE)
- Dynamic 4-point-bending (D-4BE)

#### Plates

- Static 4-point-bending (S-4BE)
- Dynamic 4-point-bending (D-4BE)

### ASTM F2193

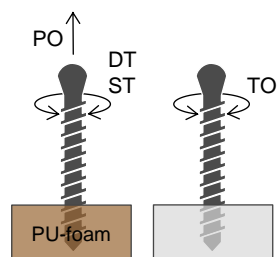
Standard Specifications and Test Methods for Components Used in the Surgical Fixation of the Spinal Skeletal System

#### Scope

Static and dynamic fatigue testing of single components of spinal fixation devices

#### Spinal region

lumbar, thoracic, cervical



- Static torsion (S-TO)
- Axial pull-out (S-PO)
- Driving torque (S-DT)
- Self tapping force (S-ST)

### ASTM F543

Standard Specification and Test Methods for Metallic Medical Bone Screws

#### Scope

Static testing of bone screws

#### Spinal region

lumbar, thoracic, cervical

For further information also regarding additional test methods not covered by this summary please contact:

SpineServ GmbH & Co. KG, Soefflinger Strasse 100, 89077 Ulm, Germany  
 Phone: +49 (0)731 175 6788  
 mail@spineserv.de  
 www.spineserv.de