

eXpert 81T Vertical Torsion Testing Machines

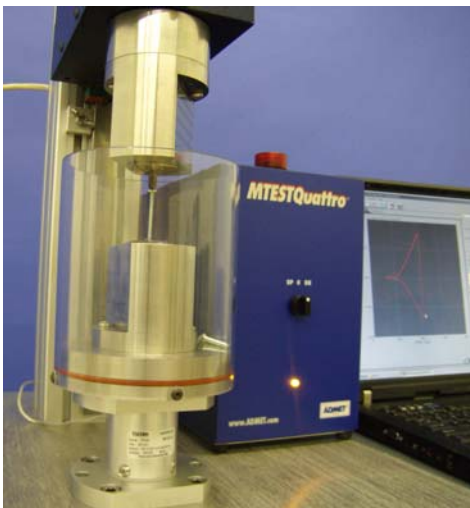
for Testing Metallic Bone Screws and Bioabsorbable Screws for Internal Fixation According to ASTM F543 and F2502.



The eXpert 81T vertical torsion testers are designed for measuring the torsional properties and driving torques of metallic and bioabsorbable bone screws according to ASTM F543 Annex A1 & A2 and ASTM F2502 Annex A1 & A2.

Torsional properties are measured by clamping a screw with 5 threads exposed then driving the screw head at 1 to 5 rpm until failure. ASTM F543 A1 and F2502 A1 require the system measure torsional yield strength at 2 degrees offset, maximum torque and angle at break. Metallic screws (F543) can be tested dry, however, bioabsorbable screws (F2502) must be tested in a 37°C bath.

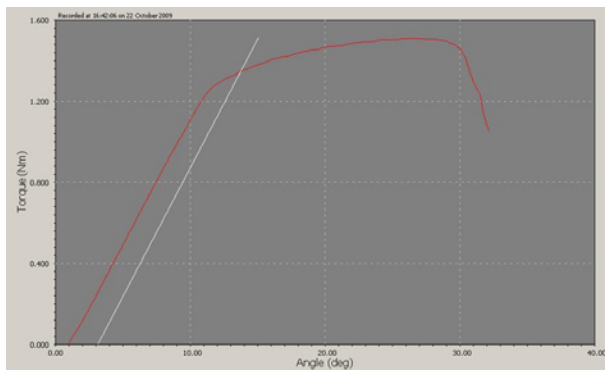
Driving torques are determined by turning a screw at 1 to 5 rpm into a test block predrilled with a pilot hole. The insertion torque is the maximum torque within the initial four turns and the removal torque is the maximum torque encountered after reversing the direction of rotation and removing the screw from the test block. A maximum force of 1.14 kgf is allowed to push on the screw during this test. ADMET provides a counterweight system to limit the axial force applied by the driving spindle.



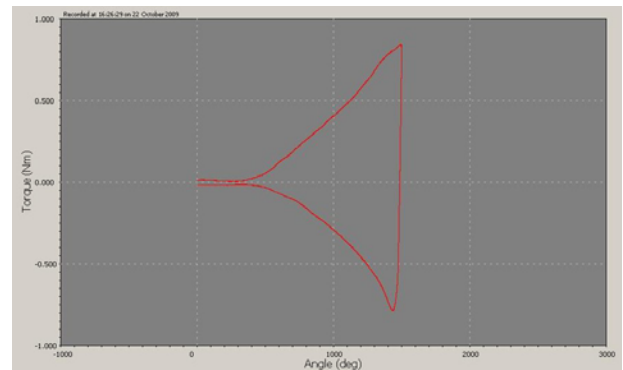
eXpert 81T 20 Nm vertical torsion machine for testing metallic and bioabsorbable medical bone screws according to ASTM F543 and ASTM F2502.

ADMET employs a standard collet work holding system for clamping screws, test blocks and driving bits of all sizes and shapes. A temperature controlled bath can be provided optionally.

eXpert 81T tabletop torsion testers are offered in vertical or horizontal capacities up to 500 Nm (4,500 in-lb). The length of the test bed, servo motor and gearing is modified to accommodate varying specimen lengths, capacities and test speeds. Each torsion tester can be equipped with ADMET's pc based torsion testing system, MTESTQuattro[®], or for a more cost effective solution the eP Digital Controller can be supplied.



ASTM F543 A1 Torque vs Angle plot with 2 degree offset line generated by turning a clamped screw until failure.



ASTM F543 A2 Torque vs Angle plot from the initial four turns of a screw turned into then reversed out of a test block predrilled with a pilot hole.



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