

# Insertion Force Testing of Various All-Inside Meniscal Repair Devices

Biomet Sports Medicine Research & Development

## Methods

Sample insertion devices of various all-inside meniscal devices were obtained to test the amount of force required to penetrate a silicone test block, which acted to simulate human meniscal tissue. The test machine utilized was Lloyd Instruments Tester ML-0557, calibrated 11/11/08, due 11/11/09 with load cell ID#XLC5KN160369, 5kN capacity. A 1" thick aluminum block with a 0.75" hole was used to support the silicone, but allow the needle to pass through. 1" blocks were used around this to support the overhanging silicone material. The machine setup for each device with the silicone test block in place is shown in Figure 1. The needles and handles were stabilized by hand during the test to keep the specimens in the orientations shown. It should be noted that the FasTfix® device elastically buckled before it penetrated the silicone. A stainless steel sleeve was placed around the shaft to reinforce it and keep it from buckling. The sleeve was .121" ID x .190" OD x 4.7" long.

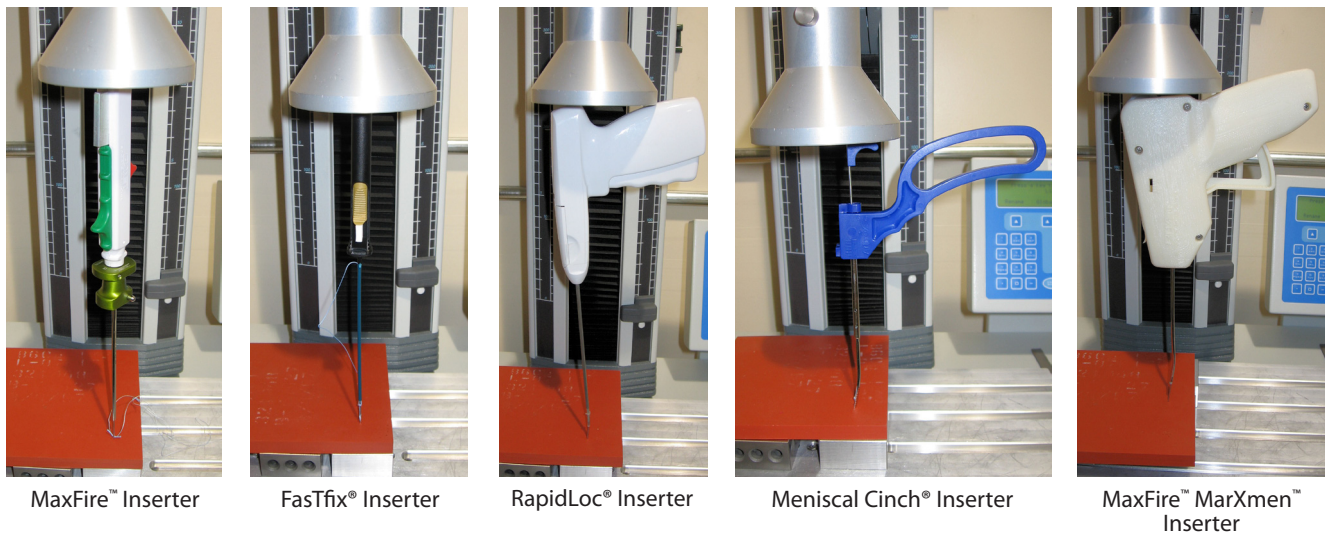


Figure #1: Test Device Set-Up for Each Insertion Device

## Results

Table #1 below shows that the MaxFire™ Marxmen™ inserter requires less force to be applied than the other insertion devices tested.

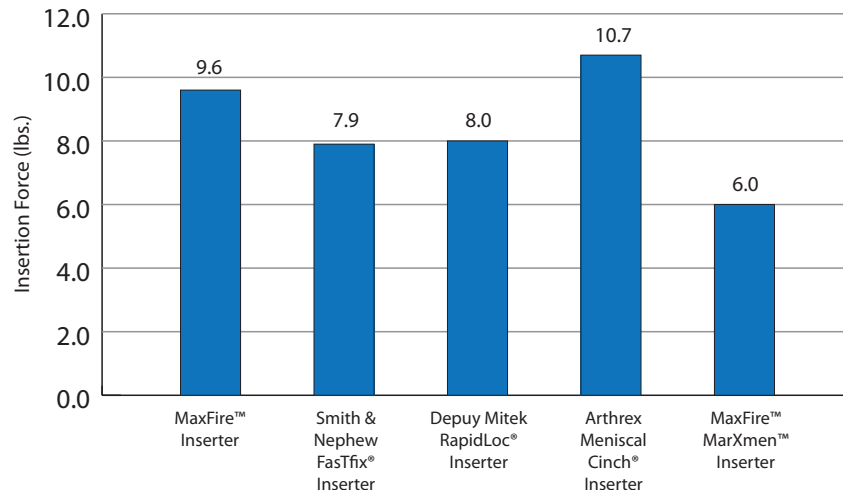


Table #1: Maximum Insertion Force from Average of Three Repetitions

Data on file at Biomet Sports Medicine. Bench testing is not necessarily indicative of clinical performance.

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