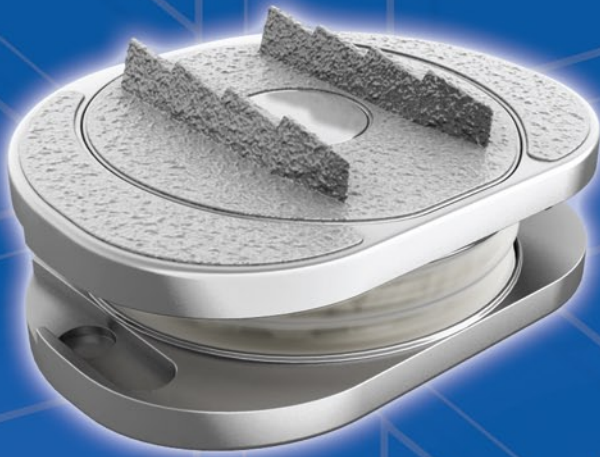
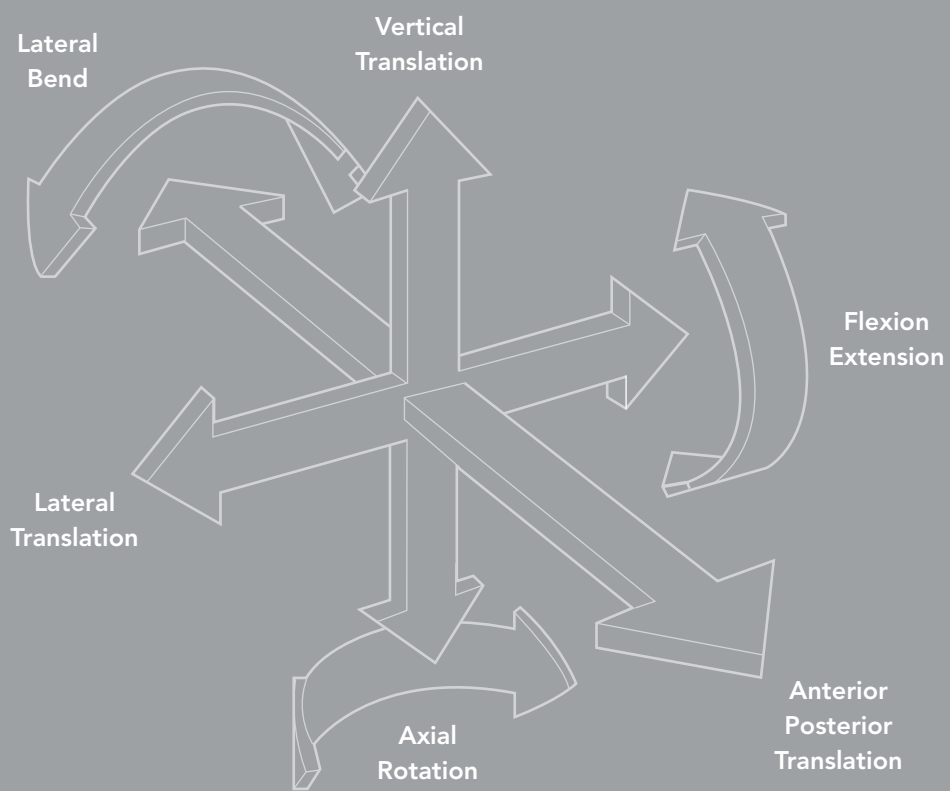


Quality of Life. Quality of Motion.



M6[®]
artificial lumbar disc



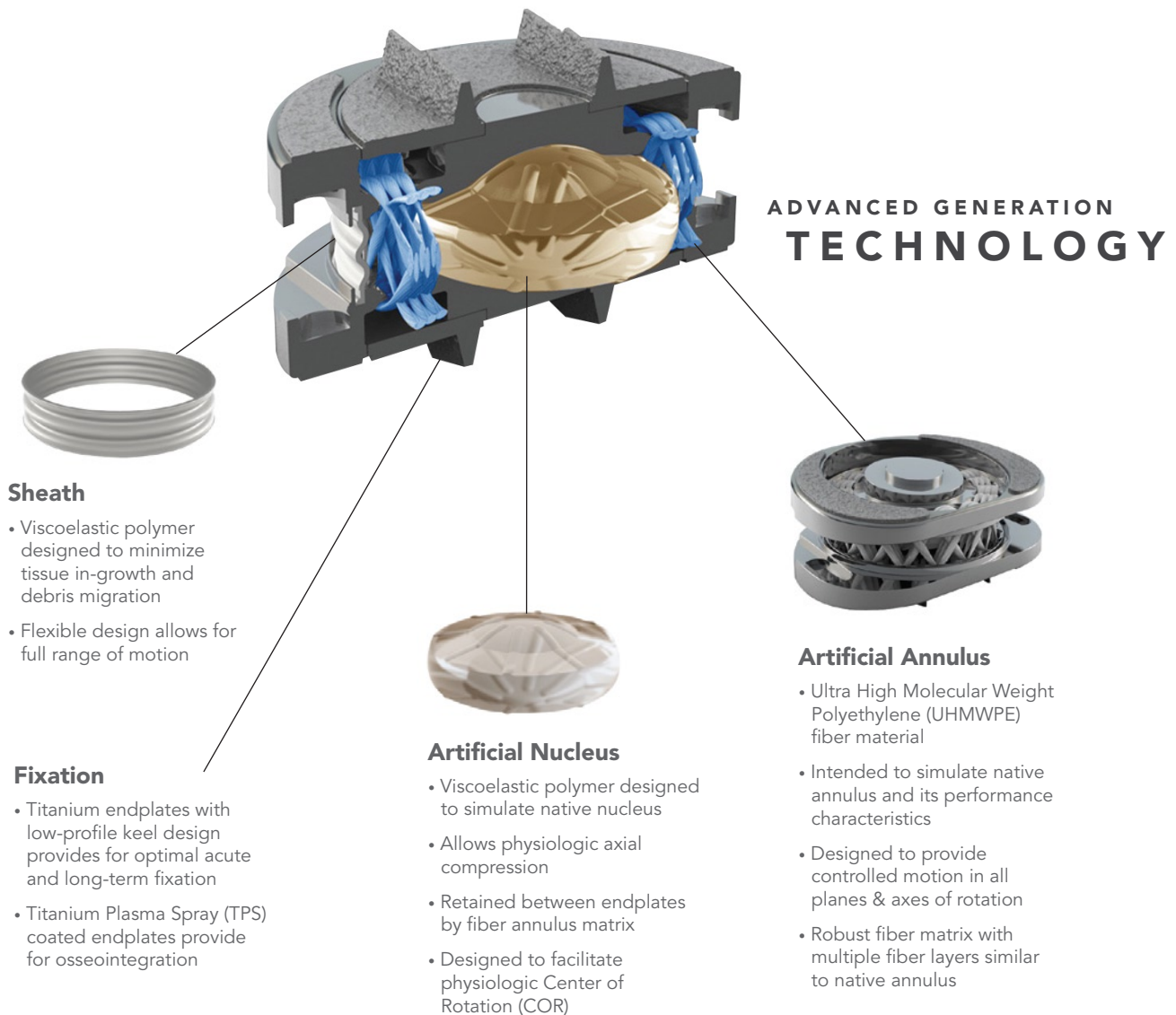
Motion in all Directions

Kinematics is the study of motion and is a vital consideration in the design and development of any artificial disc prosthesis. An object that is completely free to move in a three dimensional space is said to have six degrees of freedom.

M6^L

artificial lumbar disc

The M6-L artificial lumbar disc is designed to replicate the anatomic structure and biomechanical performance of a natural disc. Its innovative design incorporates an artificial nucleus to allow axial compression and a woven fiber annulus for controlled range of motion in all six degrees of freedom. This physiologic motion is intended to preserve segmental motion and possibly prevent or delay additional adjacent level degeneration.

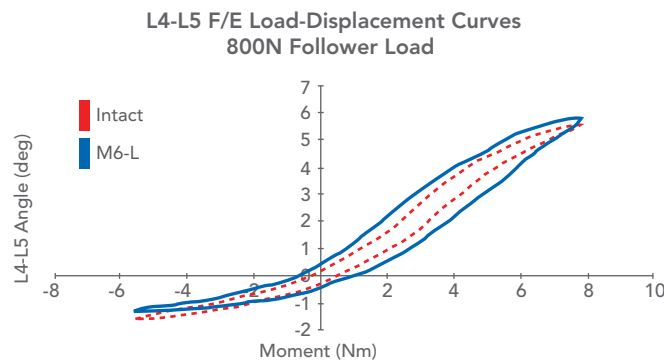
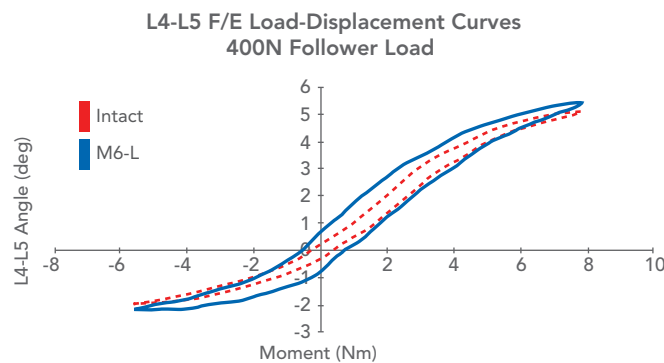


NATURALLY

M6-L Quality of Motion

Quality of Motion assesses how well the motion of an implanted functional spine unit approximates the motion of a healthy one over the entire range of motion, not just its endpoints. Through biomechanical testing, a load vs. angular displacement curve ("kinematic signature") is generated that allows assessment of the Quality of Motion parameters.

Biomechanical testing with the M6-L artificial lumbar disc has demonstrated equivalent Quality of Motion compared to the healthy disc. The innovative artificial fiber annulus and nucleus construct of the M6-L is the critical component in replicating this physiologic motion, as it is designed to provide the necessary restraint and control needed throughout the spine's natural range of motion.



The "kinematic signatures" of the intact disc (red) and M6-L lumbar disc (blue) are nearly identical. The M6-L lumbar disc maintained total ROM, vs. Intact, at 400N [$9.4^{\circ} \pm 2.2^{\circ}$ vs. $8.8^{\circ} \pm 1.1^{\circ}$, $p=0.56$], and at 800N [$9.5^{\circ} \pm 2.1^{\circ}$ vs. $8.4^{\circ} \pm 1.2^{\circ}$, $p=0.32$], with excellent Quality of Motion.

Patwardhan et al. Musculoskeletal Biomechanics Laboratory, Edward Hines Jr. VA Hospital, Hines, Illinois, USA



Extension



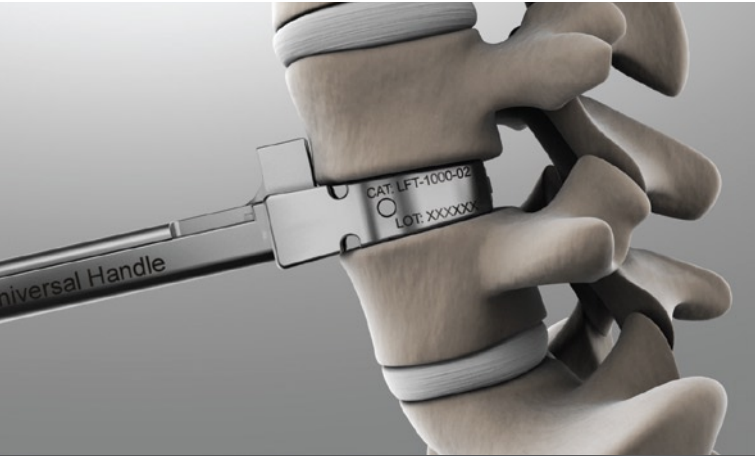
Neutral



Flexion



AP X-Ray



M6-L Lumbar Disc Trial Placement



M6-L Lumbar Disc Chisel Insertion



M6-L Lumbar Disc Insertion



Implanted M6-L Lumbar Disc



M6-L Surgical Instrumentation

The M6-L surgical instrumentation system was designed with surgeon feedback for simple, safe, and reproducible implantation of the disc. Instrumentation includes Trials to assess optimal disc size and placement, Chisels to cut keel tracks for disc insertion, and an Inserter to easily implant the M6-L into the intervertebral space.

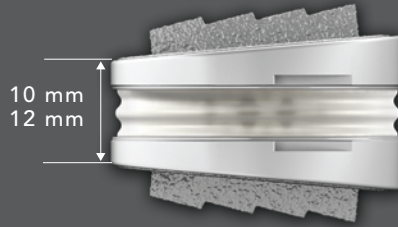
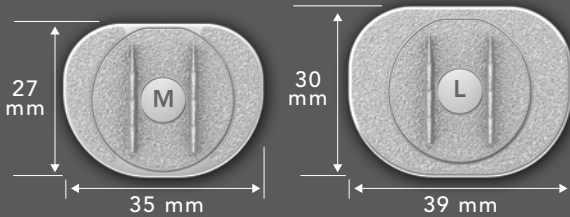
The M6-L instrumentation incorporates the CAP (Center Alignment Port) system that provides optimal alignment under fluoroscopy to the Trial in both A/P and lateral views to better assess midline placement.

M6^L

artificial lumbar disc

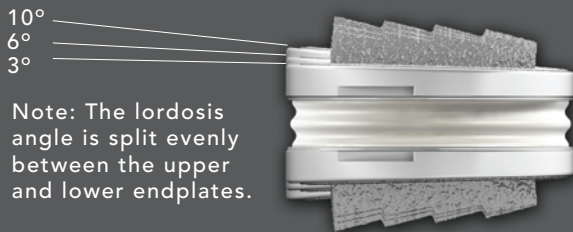
To accommodate the various anatomical ranges, the M6-L artificial lumbar disc is available in a variety of heights, angles, and endplate footprints.

Posterior



Anterior

Lordotic Angles



Endplate Footprint [mm]	Height [mm]	Lordosis
MEDIUM		
35mm W x 27mm D	10	3°
35mm W x 27mm D	10	6°
35mm W x 27mm D	10	10°
35mm W x 27mm D	12	3°
35mm W x 27mm D	12	6°
35mm W x 27mm D	12	10°
LARGE		
39mm W x 30mm D	10	3°
39mm W x 30mm D	10	6°
39mm W x 30mm D	10	10°
39mm W x 30mm D	12	3°
39mm W x 30mm D	12	6°
39mm W x 30mm D	12	10°



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