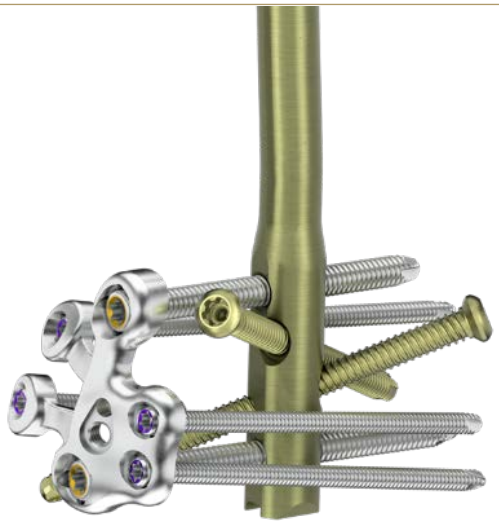
RFN-Advanced™ Retrograde Femoral Nailing System with Locking Attachment Washer:

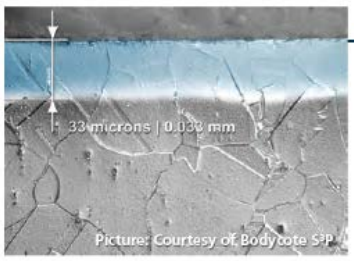
Use of Titanium IM Nail and Stainless Steel VA Locking Screws with OPTILINK® Technology

DePuy Synthes Trauma, West Chester, PA USA



Introduction: DePuy Synthes RFN-Advanced™ Retrograde Femoral Nailing System offers the Locking Attachment Washer which enables additional fixation in the distal femur with a fixed angle combination of Variable Angle Locking Screws that are secured to the Locking Attachment Washer and to the IM Nail. The RFN-Advanced Nail is made of titanium alloy. The Locking Attachment Washer is made of 316L stainless steel. To enable interlocking of these metals, VA locking screws with OPTILINK® Technology are required. The use of screws with OPTILINK® Technology enables RFN-Advanced Nail to be interlocked with the Locking Attachment Washer without increased likelihood of galvanic corrosion[1].

Method: VA Locking Screws with OPTILINK® Technology are stainless steel screws that underwent carburizing, a low temperature (approximately 500°C) heat treatment process applied to metals in an environment enriched with carbon. The surface of the screw absorbs the carbon (33µm layer thickness) and increases hardness and strength. The screws were then tested alongside IM nails made of Ti-6Al-4V for galvanic corrosion testing according to ASTM F3044, in a worst-case surface contact scenario related to the construct[1].



Carburization is not a coating but a higher amount of carbon integrated in the outer surface of the screw (thickness 33 µm).

Results: The mixed metal construct of a titanium alloy RFN-Advanced Nail with screws with OPTILINK® Technology demonstrates corrosion resistance properties equivalent to non mixed-metal titanium alloy-titanium alloy constructs[1]. This makes mixing metals possible.

Conclusion: Variable Angle Locking Screws with OPTILINK® Technology have been used in combination with other titanium implants, such as the titanium 4.5mm VA LCP® Curved Condylar Plates. The extended use of this Technology for use with RFN-Advanced System has been demonstrated.

1. DePuy Synthes Fretting and Galvanic Corrosion Testing Summary. 07/24/2020. Windchill Document #0000297100*

*Bench testing may not be indicative of clinical performance.

DePuy Synthes
PART OF THE Johnson & Johnson FAMILY OF COMPANIES

www.jnjmedicaldevices.com

151786-200902 01/21

Please refer to the instructions for use for a complete list of indications, contraindications, warnings and precautions.