

REVOLUTION™ Spine System Benefits

Reduced Risk of Infection

Spine procedures carry a risk of infection, and current literature¹ suggests that a significant amount of wound contamination occurs during surgery. Trays of implants and instruments, when exposed to the OR environment, become a source of contamination. The Revolution™ system eliminates this source with pre-sterilized implants that are not opened from their sterile packaging until the surgeon is ready to implant. Additionally, a reduced number of instruments are required to implant the system, and these instruments are provided in a single pre-sterilized instrument tray which remains sterile until the packaging is opened.

Every kit is sterile and ready for surgery

In the hospital, time savings are essential. Revolution™ eliminates the need to wrap and sterilize implant and instrument trays, saving time and money. There are no more concerns with holes in tray wrapping and potentially compromised surgical trays. Additionally, there is no need to keep track of surgical instrument inventory. For each case, a new single-use tray is opened, then disposed of at the end of the case.

Rod reduction eliminated

Typical pedicle screw constructs require rod contouring in an attempt to restore the lordotic curve of the spine. When there is a mismatch between rods and pedicle screw heads, a rod reducer, or rod persuader device is used to properly set the rod in the pedicle screw and then utilize a set screw to secure the rod. However, these rod persuader devices can result in the screw having significantly less fixation strength in the bone if the screw is pulled toward the rod.² With Revolution™, the lordotic curve is restored without rod reduction, as the construct is seated one segment at a time, allowing assembly with secure fixation of the pedicle screws. This is an easier, faster, and more accurate approach.

Less time

Revolution™ requires less time to implant, as rod cutting and contouring are eliminated by using the highly adjustable Revolution™ connector design. Compression and distraction are conducted with a simple, easy to use instrument, which eliminates the need for bulky, complex, and expensive instrumentation.

NUT is included in the design

Revolution™ does not require the use of set screws, as the locking nut is contained within the connector. No cross-threading concerns, no extra small parts to maintain and inventory. No additional steps required, such as the tedious requirement of placing set screws over the rod needed in a typical

polyaxial screw system. With the locking mechanism built into the Revolution connector, simply place the gold colored locking nut over the screw post and tighten with the sterile torque wrench.

Incidence

The incidence of rod damage caused by rod bending and contouring is eliminated. Studies report that rod bending during surgery of titanium alloy rods can result in reduced endurance limits of titanium alloy.³ This is not the case with Revolution™, as there is no rod bending and contouring with the highly adjustable Connector.

ON the cutting edge of spine procedures

The Revolution™ Spinal System has benefits across the board – for surgeons, hospitals, and patients.

REFERENCES

- (1) Kris Radcliff et al., “What is new in the diagnosis and prevention of spine surgical site infections”, *The Spine Journal*, 15 (2015) 336-347.
- (2) Daniel Kang, et al., “Effects of rod reduction on pedicle screw fixation strength in the setting of Ponte osteotomies”, *The Spine Journal*, 15 (2015) 146-152.
- (3) Kenta Yamanaka, et al., “Analysis of the fracture mechanism of Ti-6Al-4V alloy rods that failed clinically after spinal instrumentation surgery”, *Spine*, 2015, Vol 40, No 13, pp E767-E773.



intelligentimplantsystems