

extremities solutions



SURGICAL TECHNIQUE

WRIGHT.

CHARLOTTE™
Compression Staple

CHARLOTTE™
COMPRESSION STAPLE

as described by
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INTRODUCTION

The CHARLOTTE™ Compression Staple System is a highly versatile implant for osteotomies and arthrodeses of the foot. It is particularly useful in calcaneal-cuboid joint fusions, talonavicular fusions, calcaneal osteotomies, arthrodeses of the midfoot joints, midfoot osteotomies, and corrective osteotomies of the forefoot. The CHARLOTTE™ Compression Staple is a unique low-profile device that delivers a great deal of compression across a joint.

SURGICAL GOALS

- To provide maximum compression across the fusion site of two bones from an adjacent position.
- To ensure maximum stiffness of the fusion construct while minimizing device profile.
- To utilize a device highly resistant to pullout.

SYSTEM BASICS

- All CHARLOTTE™ Compression Staple implant components are manufactured from surgical grade stainless steel for maximum strength and stiffness.
- Staples are measured in leg length (distance from the underside of the staple to the tips of the legs) and interaxis distance (inside distance between legs).
- Staples are available with leg lengths of 11, 13, 15, 17, 20 and 25mm.
- Staples are available with interaxis distances of 13, 15, 20, and 25mm.





FIGURE 1 |



FIGURE 2 |

SURGICAL TECHNIQUE - CALCANEAL CUBOID FUSION

EXPOSURE/PREPARATION

Expose the calcaneal cuboid joint through a lateral (Ollier) incision. Distract the joint with a lamina spreader, and sharply debride the articular cartilage to expose bleeding subchondral bone. A powered drill can also be used to further penetrate the subchondral bone and ensure that bleeding bony surfaces are in apposition prior hardware placement.

STAPLE SIZING

Interaxis distance is chosen so that the staple will span the fusion site and leave an adequate bony bridge between the staple legs. The CHARLOTTE™ Drill Guide (P/N 43112030) can be used as a visual reference. The staples are intended for unicortical fixation. The leg length is chosen to be as long as possible without penetrating the opposite cortex. If in between sizes, use the shorter leg length.

DRILL GUIDE ADJUSTMENT

The CHARLOTTE™ Drill Guide must be adjusted to match the staple's interaxis distance. Retrieve the appropriate staple from the surgical tray using the CHARLOTTE™ Combination Holder/Spreader (P/N 43112001). | **FIGURE 1** Loosen the sliding mechanism on the CHARLOTTE™ Drill Guide by turning the thumbscrew on the handle. Insert the legs of the chosen staple into the grooves on the top of the instrument and re-tighten the thumbscrew to lock. | **FIGURE 2** Set the staple aside for later use. Alternatively, set the gauge to the appropriate size using the scale printed on the drill guide and verify with the staple.



FIGURE 3 |

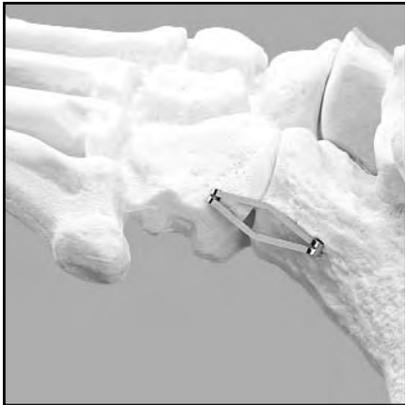


FIGURE 4 |



FIGURE 5 |

SURFACE PREPARATION

Assess the surface upon which the compression staple will sit. If the surface is uneven or irregularly contoured, the staple may not sit flush after insertion. If necessary, bone may be removed with rongeurs or a powered burr prior to staple placement. Leave as much cortical bone intact as possible, particularly in the regions that will support the staple legs.

HOLE PREPARATION

Place the tips of the Drill Guide against the bony surface in the desired location of the staple legs (preferably with equal amount of bone on each side of the area to be compressed). Attach the 3.0mm CHARLOTTE™ Drill (P/N 43112032) to a powered driver using a medium Jacobs chuck, and drill through both tubes of the CHARLOTTE™ Drill Guide. | **FIGURE 3** Since the staples are designed for unicortical placement, it is only necessary to drill through the 1st cortex and underlying cancellous bone.

STAPLE INSERTION

Manually insert the staple into the drilled holes. A rat-tooth hemostat may be helpful for holding the staple during insertion. Use manual pressure and/or impaction to ensure that the staple sits flush with the underlying bone. | **FIGURE 4** If necessary, use the CHARLOTTE™ Staple Impactor (P/N 42112004) and a mallet to finish insertion.

STAPLE COMPRESSION

To adjust compression, use the CHARLOTTE™ Combination Holder/Spreader to squeeze the sides of the expansion mechanism outward, drawing the staple legs together. | **FIGURE 5** Use firm pressure to ensure maximum compression; however, use caution in soft bone as the legs may tend to “plow” through the drilled holes if excessive force is used. Surgical closure is performed in the normal fashion.



ORDERING information

CHARLOTTE™ COMPRESSION STAPLE

PART NUMBER	DESCRIPTION
43110001	COMPRESSION STAPLE, 13I X 11L
43110002	COMPRESSION STAPLE, 13I X 13L
43110012	COMPRESSION STAPLE, 13I X 17L
43110003	COMPRESSION STAPLE, 15I X 11L
43110004	COMPRESSION STAPLE, 15I X 13L
43110005	COMPRESSION STAPLE, 15I X 15L
43110006	COMPRESSION STAPLE, 20I X 15L
43110007	COMPRESSION STAPLE, 20I X 20L
43110008	COMPRESSION STAPLE, 20I X 25L
43110009	COMPRESSION STAPLE, 25I X 20L

INSTRUMENTS

43112001	COMPRESSION STAPLE, HOLDER/SPREADER
42112004	STAPLE IMPACTOR
43112030	COMPRESSION STAPLE, DRILL GUIDE
43112032	COMPRESSION STAPLE, 3.0MM DRILL
41112016	MTP FUSION, SCREW DEPTH GAUGE

SURGICAL TRAY

43110011	COMPRESSION STAPLE, SURGICAL TRAY
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