

Spider[®]

Cervical Plating System



SURGICAL TECHNIQUE

The logo features the word "Spider" in a blue, sans-serif font, followed by a registered trademark symbol (®). The background of the entire page is white with a large, light gray geometric pattern consisting of several parallel diagonal lines forming a series of nested chevrons or a stylized 'S' shape that runs from the top-left towards the bottom-right.

Spider®

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SPIDER® CERVICAL PLATING SYSTEM SURGICAL TECHNIQUE

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SURGICAL TECHNIQUE – SPIDER®

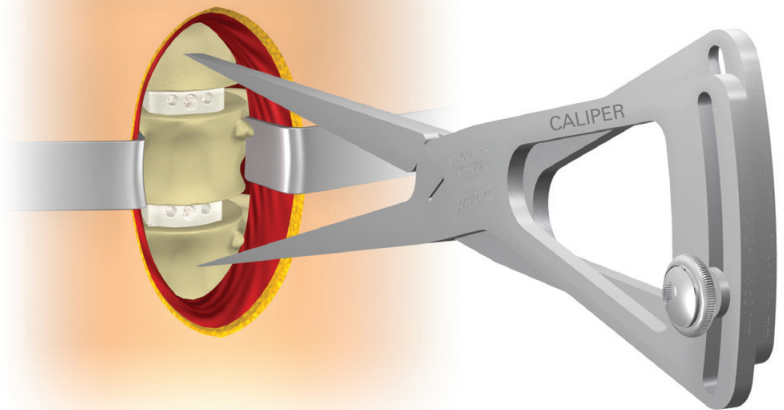
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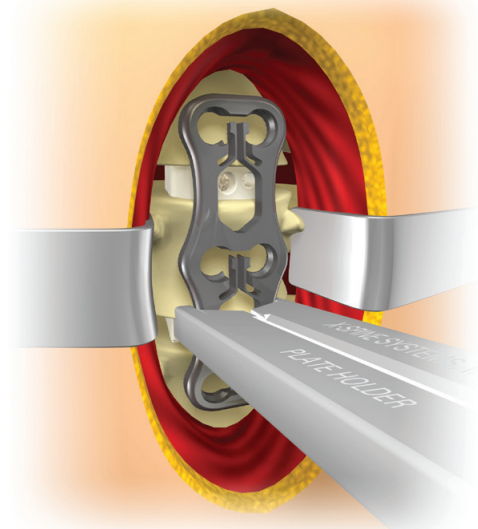
Step 1: Site Preparation

- The anterior cervical spine is exposed via the standard surgical approach of Cloward. Interbody bone grafting is performed at the desired disk levels. The ventral cortical surface must be free of osteophytes and smooth in profile prior to plate placement.



Step 2: Sizing

- A plate is selected such that the screw sockets are located in the mid-portion of the vertebra. The plate should be centered in the midline and confirmed using anatomical landmarks and AP radiography. Sizing may be determined by using the Neuro Caliper instrument. Plate sizing corresponds to the overall plate length, not screw socket distance. A Plate Holding Instrument is provided to assist in plate placement.

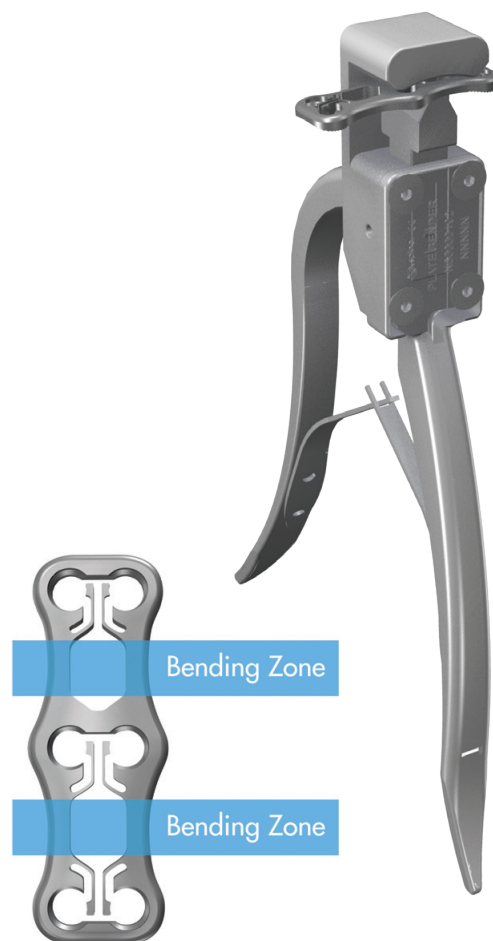


Step 3: Plate Bending

- The SPIDER plate comes with a standard lordotic curve. If additional lordosis is required, the Plate Bending Instrument may be used. The plate should be bent within the Bending Zone. To increase the lordotic curve further, bend the plate at multiple locations across the Bending Zone.

CAUTION - Once bent, avoid reverse bending the plate in the same location. This may result in plate weakening and premature fatigue fracture.

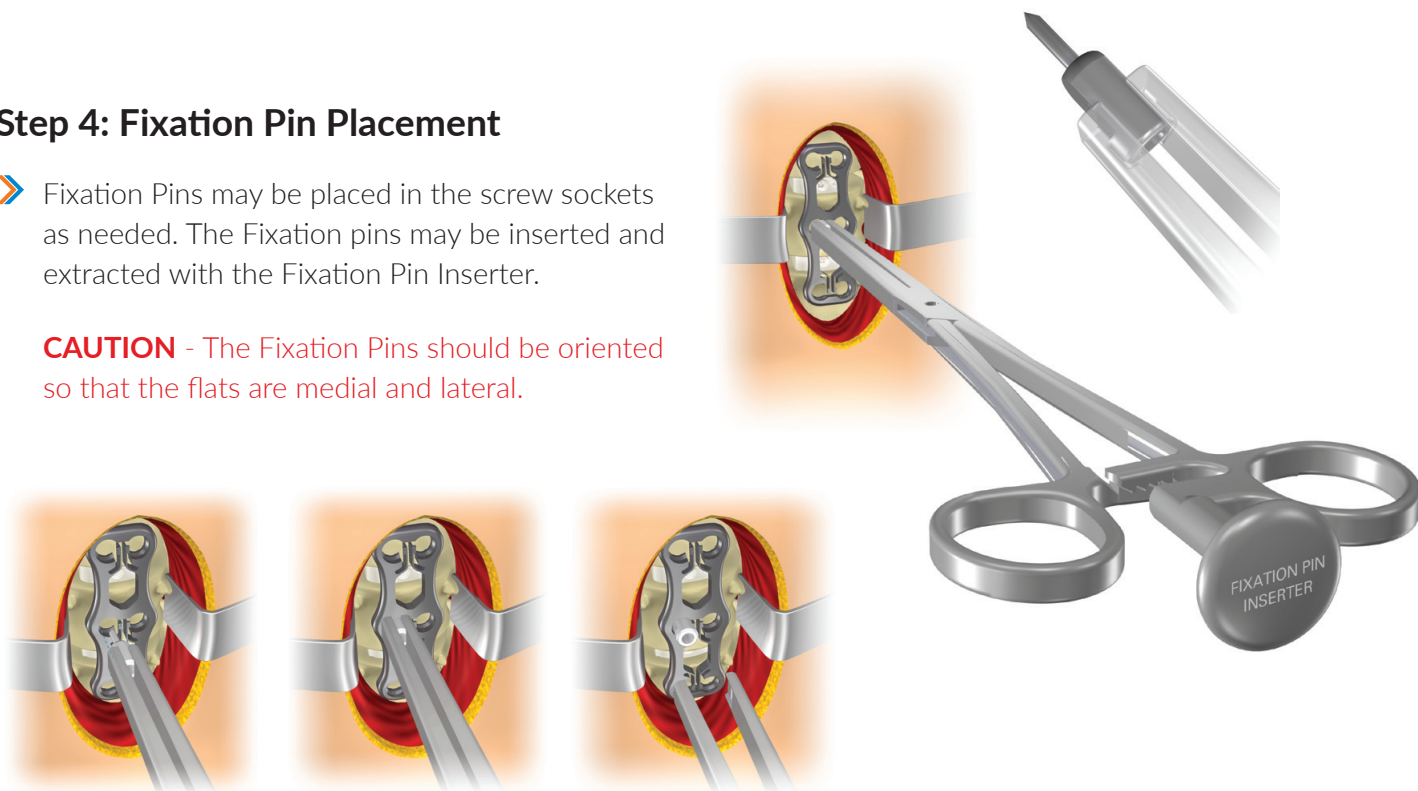
CAUTION - Avoid bending the plate in the region of the locking mechanism. This may result in screw locking mechanism malfunction.



Step 4: Fixation Pin Placement

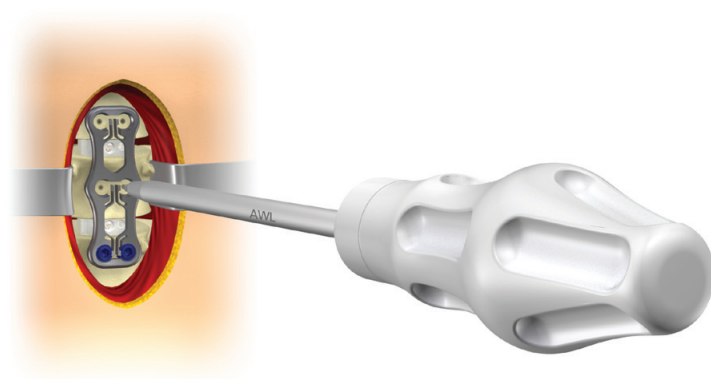
- Fixation Pins may be placed in the screw sockets as needed. The Fixation pins may be inserted and extracted with the Fixation Pin Inserters.

CAUTION - The Fixation Pins should be oriented so that the flats are medial and lateral.



Step 5: Bone Awl

- The bone awl instrument is used to penetrate the cortical bone via each screw socket. Optionally, fixation pins may be placed through the screw sockets to temporarily hold the plate in the midline.



Step 6: Drilling

- The SPIDER Cervical Plating System is designed to be used with the self-drilling screws provided. Self-drilling screws preserve cancellous bone for screw purchase and generally result in improved screw fixation compared with drilled screws. In cases where there is unusually hard bone present, drilling can be performed. If drilling is desired, the drill guide instruments are used to guide the drill bit through each screw socket.

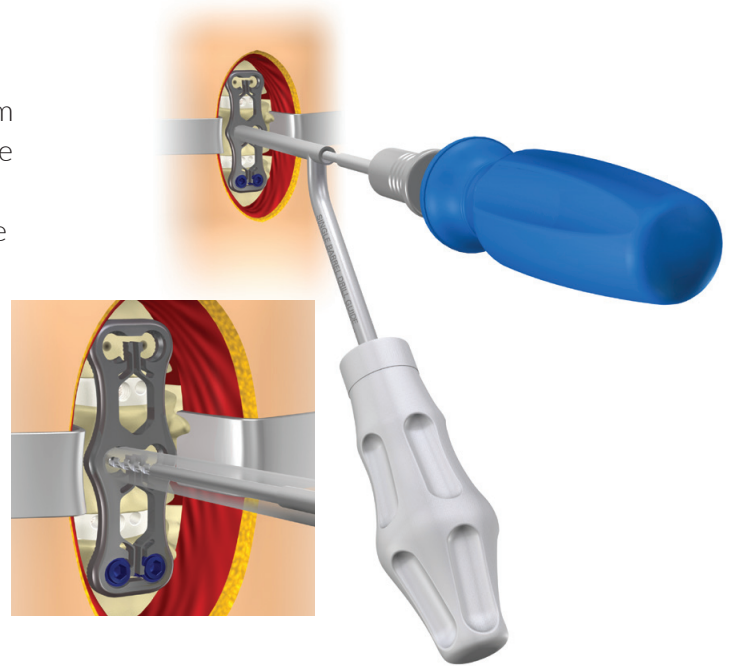
Drill bits are provided in 12, 14, and 16mm lengths, corresponding to the available screw lengths. The drill bits have a standard AO quick-connect coupling. A ratcheting handle for hand-drilling is provided.

CAUTION - Excessive angulation force on any drill guide should be avoided. Over-angulation of the drilled hole beyond 7.5 degrees may result in failure of the screw to engage the plate and/or locking mechanism.



OPTION 1: Variable Single Barrel Drill Guide

- The Variable Single Barrel Drill guide allows for approximately 15 degrees of total drill angulation with respect to the plate. It has a soft-stop mechanism to indicate over-angulation. It is important not to force the guide past 7.5 degrees in any direction. The drill guide tip has flats on the lateral sides (with the handle in the rostral or caudal position). The flats allow for the drill guide to engage the screw socket without impacting the locking arm, which should be avoided. The Variable Single Barrel Drill Guide is intended to be used with variable (blue or yellow) screws.

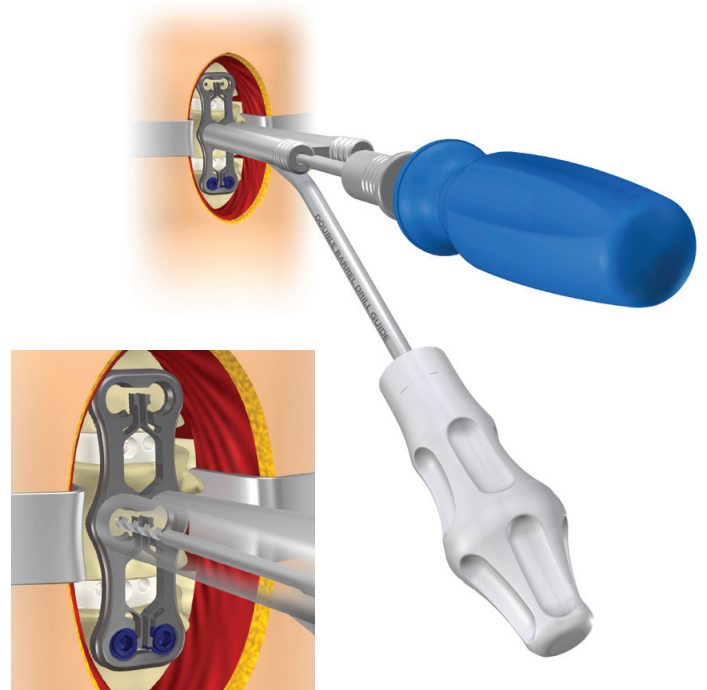


OPTION 2: Fixed Single Barrel Drill Guide

- The Fixed Single Barrel Drill guide has a hard-stop mechanism to prevent significant angulation of the guide with respect to the plate. The drill guide tip has flats on the lateral sides (with the handle in the rostral or caudal position). The flats allow for the drill guide to engage the screw socket without impacting the locking arm, which should be avoided. The Fixed Single Barrel Drill guide is intended to be used with fixed (magenta or green) screws.

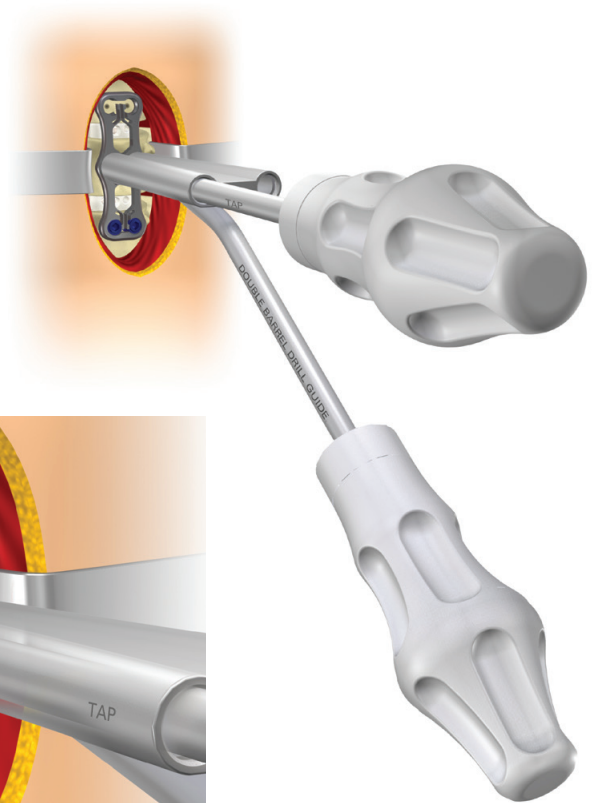
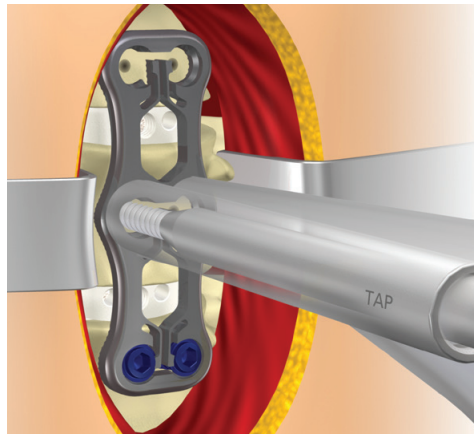
OPTION 3: Double Barrel All-In-One Drill Guide

- The Double Barrel All-In-One Drill Guide instrument may be used as an alternative to the Variable Single Barrel Drill Guide instrument. The Double Barrel All-In-One Drill Guide instrument has a tip which is dimensioned to be engaged into the slotted area adjacent to the screw sockets. The Double Barrel All-In-One Drill Guide instrument allows for the placement of the Bone awl, Thread Tap, and Hex Driver through the guide while it is engaged in the plate. Each barrel contains a removable Drill Insert which must be removed to allow the use of the instruments through the guide.



Step 7: Thread Tapping

- The provided screws are fluted for self tapping. For unusually hard bone, a 4 mm threaded tap is provided.



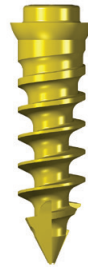
Step 8: Screw Selection

- Screws are available in 12, 14 and 16mm lengths and the following Diameters:

4.00mm
Variable
Blue



4.25mm
Variable
Yellow



4.00mm
Fixed
Magenta



4.25mm
Fixed
Green



Step 9: Screw Angulation

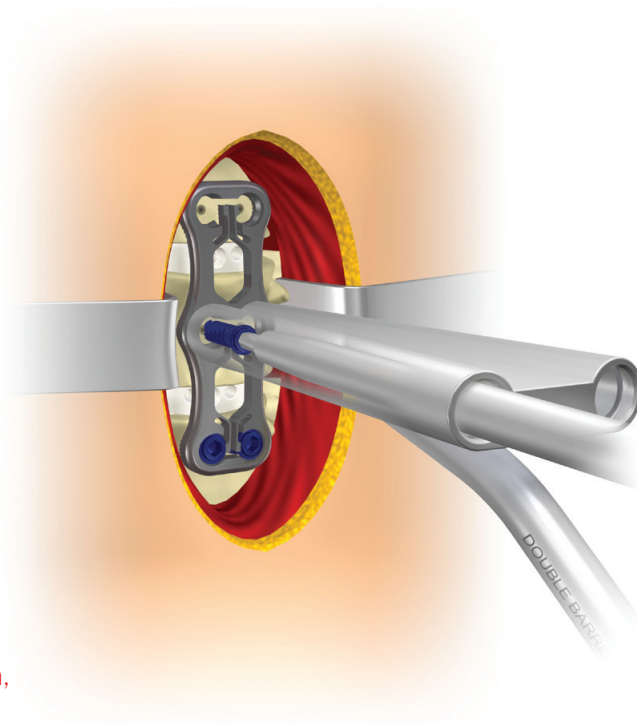
- **CAUTION**- Angulating the variable screws greater than 7.5 degrees in any one direction may prevent the screw from engaging the plate and/or locking mechanism properly.



Step 10: Screw Placement

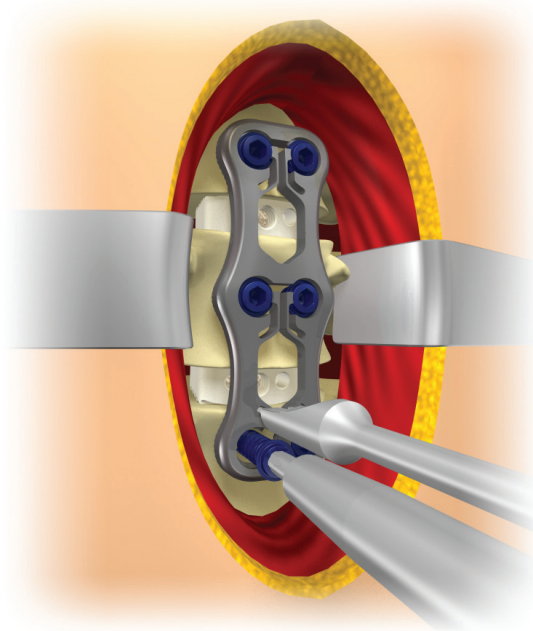
- The Hex Driver instrument is used to drive the screws into bone. The Hex Driver tip is designed to self-retain the screw. As the screw is tightened into bone, the screw head will pass through the resilient locking arm. An audible and tactile click should be noted as the screw engages the locking mechanism. Positioning of the locking tab in front of the screw shoulder should be visually confirmed.

CAUTION - Placement of high torque force during screw tightening may result in plate damage, stripping of bone and weakening of the bone/screw interface. If screw stripping or other compromise of the bone/screw interface occurs, placement of a wider and/or longer screw is advised, within anatomical limitations. If screw replacement fails to establish adequate strength, repositioning of the plate is advised. Following plate placement, radiography is recommended to confirm appropriate positioning.

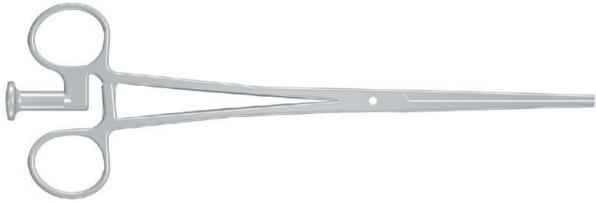


Step 11: Screw Removal

- If a screw needs to be removed, the screw removal tool is placed into the slotted area adjacent to the screw socket. The Screw Removal Instrument should fully engage the plate and by doing so will retract both locking arms of a screw socket pair. The Screw Removal Instrument has a built in 15 degree angulation with respect to the plate. This allows for clearance of the hex-driver. The Hex Driver can then be used to withdraw the screw.



SPIDER® INSTRUMENTS



Spider Fixation Pin Impactor – #N60001054



Spider Screw Removal Device – #N60000190



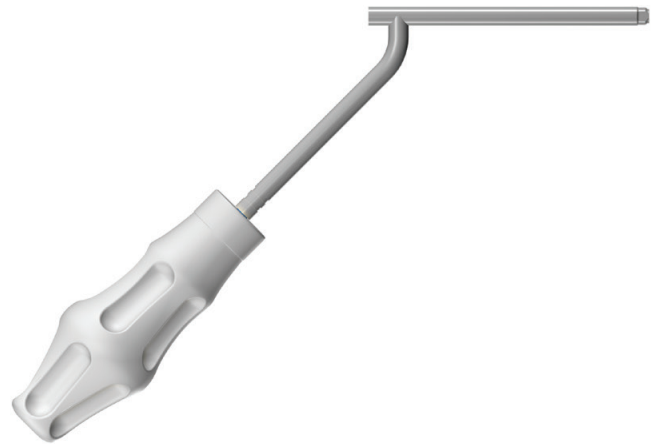
Spider Drill – #N60000175,176,177



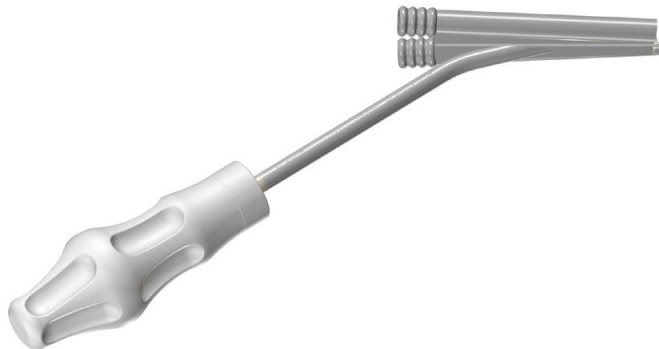
Spider Awl – #N60000165



Spider Tap – #N60000170



Spider Single Barrel Drill Guide – #N60000180 & #N60001050



Spider Double Barrel Drill Guide – #X009-0010



Spider Plate Holder – #N60000089

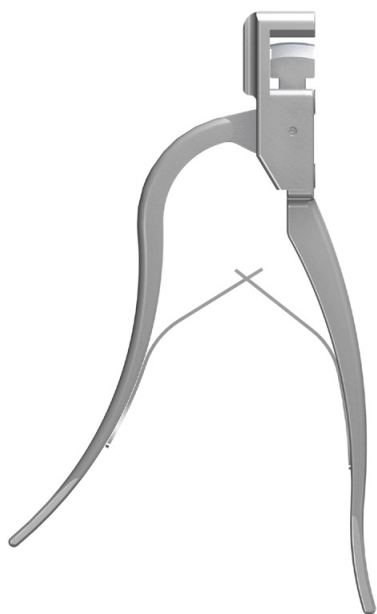
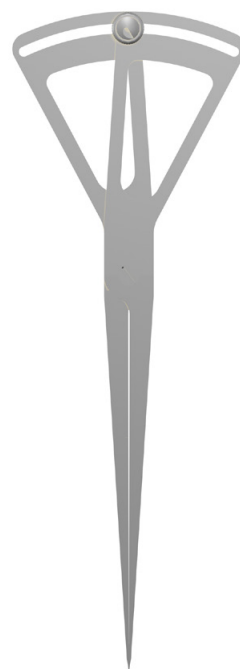


Plate Bender – #N60000192



Neuro-Caliper – #N60000482



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INDICATIONS: See Package Insert for a more complete listing of indications, contraindications, warnings, precautions, and other important information.

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