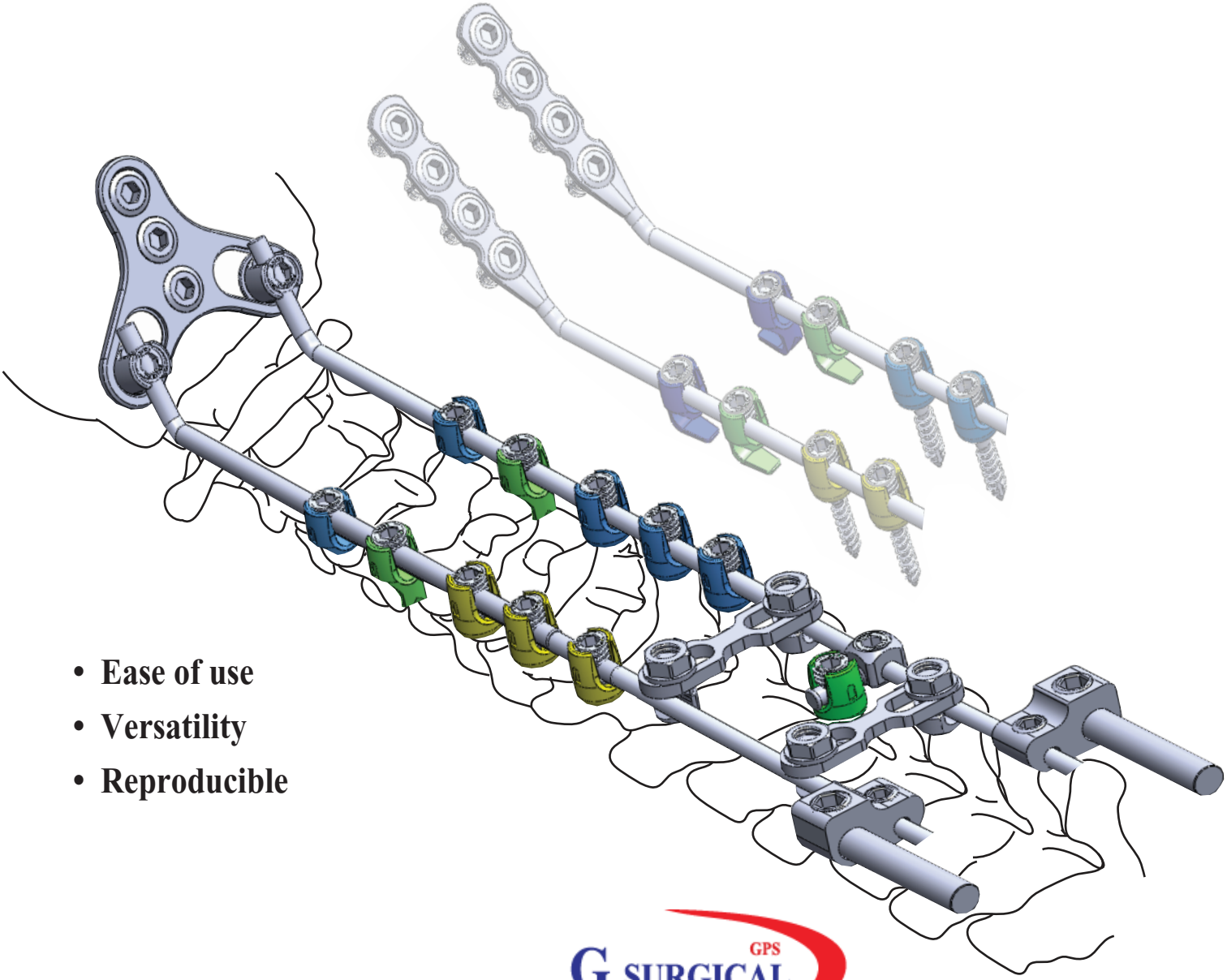
A MODULAR SYSTEM THAT ALLOWS MUTIPLE OPTIONS FOR POSTERIOR STABILIZATION OF THE UPPER SPINE

G SURGICAL
P OSTERIOR OCT
S YSTEM

G SURGICAL OCCIPITAL CERVICAL THORACIC (OCT) SPINAL SYSTEM SURGICAL TECHNIQUE



- **Ease of use**
- **Versatility**
- **Reproducible**

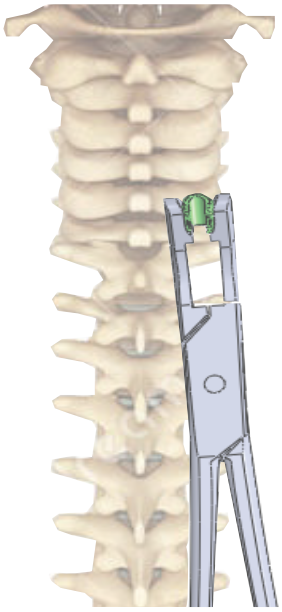
G SURGICAL GPS

9433 Bee Cave Road, Building 3,
Sutie 101-A, Austin, TX 78733 USA
Phone: 1 512 494 4749
www.gsurgical.com



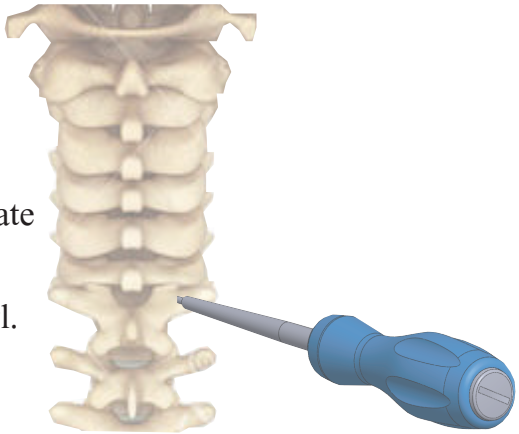
PATIENT PREPARATION

The patient is placed to allow posterior exposer with the head and neck in proper alignment to avoid specific pressure points. A padded neck holder or a 3 point fixation device may be utilized to assist in holding the spine position. A midline incision is made and dissection performed to the spinous process at the required surgical site. Exposer should include lateral masses, facet joints and transverse processes of the cervicothoracic spine.



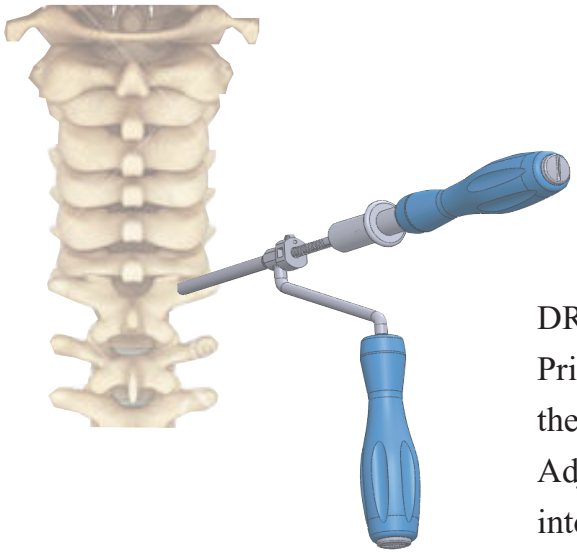
LAMINA HOOKS (C1-C7)

Select the appropriate lamina hook size, 4.5 mm or 6 mm from the 2 sizes available, color coded by size. Use the Hook holder to secure and place the appropriate hook. The Lamina Elevator can be used to assist in placement of the hooks.



POLYAXIAL SCREWS (T1-T3)

Select Entry Point. Determine the entry point and trajectory for the screw. Using the Awl, create a pilot hole at the appropriate location, penetrating the cortical bone up to the 10 mm depth stop portion of the Awl.

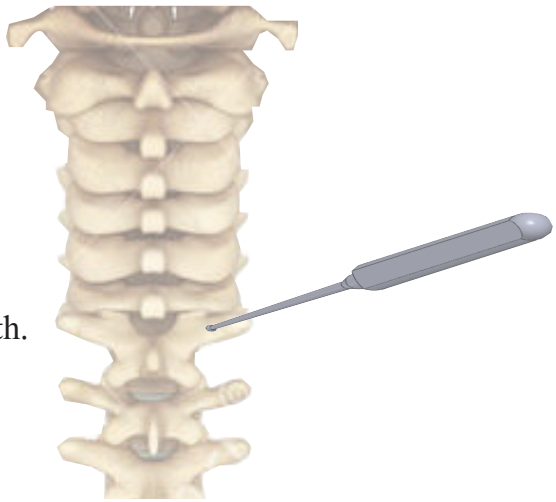


DRILL

Prior to drilling, set the Adjustable Stop on the 3.5 mm drill to the appropriate depth as visualized in the window section of the Adjustable Stop. Using the Drill Guide, insert the drill and handle into the Drill Guide and rotate to drill up to the Depth Stop at the desired trajectory. The Probe may also be used to provide the insertion hole for the Polyaxial Screw.

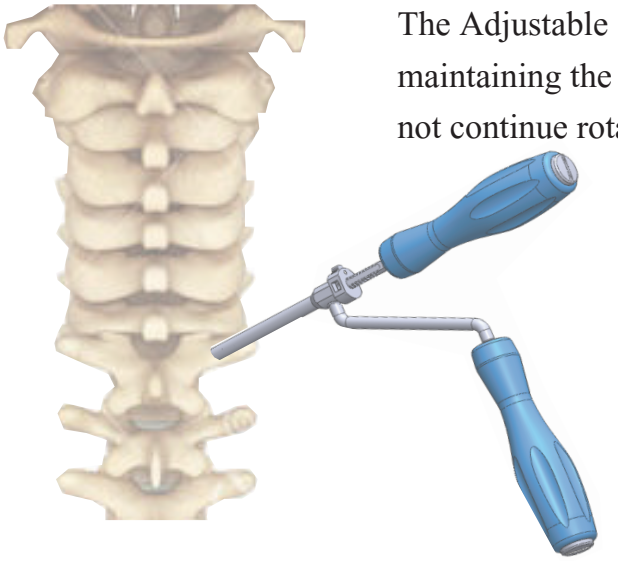
PALPATE

Using ether the straight or curved Tester, palpate the hole to verify cortical bone surrounding the canal.



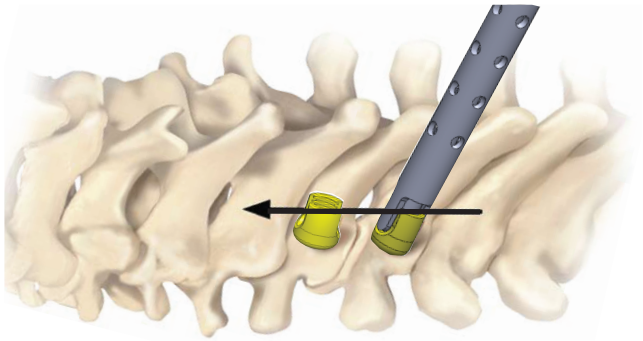
VERIFY HOLE DEPTH

The depth gauge is provided to confirm the desired bone hole depth.



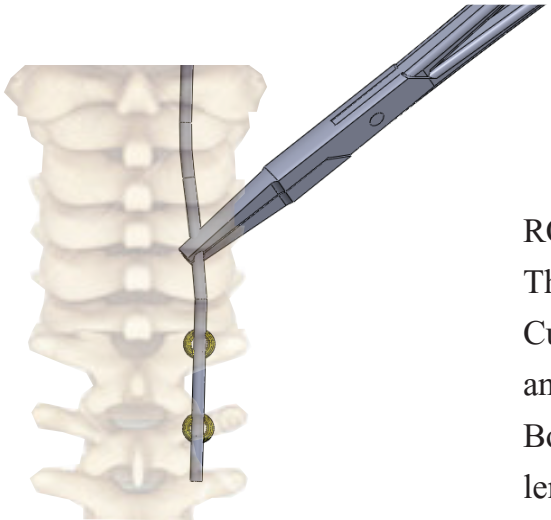
TAP

The Adjustable Stop is placed on the 3.5 mm Tap. The tap is rotated, maintaining the same trajectory as the drill to the appropriate depth. Do not continue rotation once the adjustable stop contacts the Drill Guide.



SCREW PLACEMENT

Insert the screw onto the Poly Screw Driver with quick connect handle (T- Handle or Straight Handle) and advance to the depth of the hole. Disengage the Poly Screw Driver by holding the outer shaft and counter rotating the handle to remove the driver from the screw. The remaining screws can be inserted in the same manor.

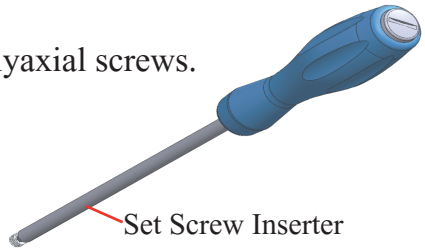


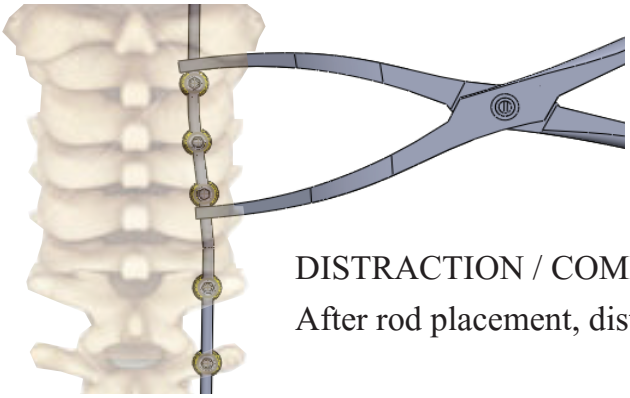
ROD INSERTION

The rod can be cut to the desired length using the Rod Cutter and can be contoured using the Rod Bender. Left and Right Bending Irons are also available for contouring. Both 3.5 mm rods and transition rods provided, in several lengths may be formed depending on the instrumented segments requiring screws and hooks.

SET SCREW INSERTION

Using the Set Screw Inserter, provisionally tighten the set screws to the polyaxial screws.



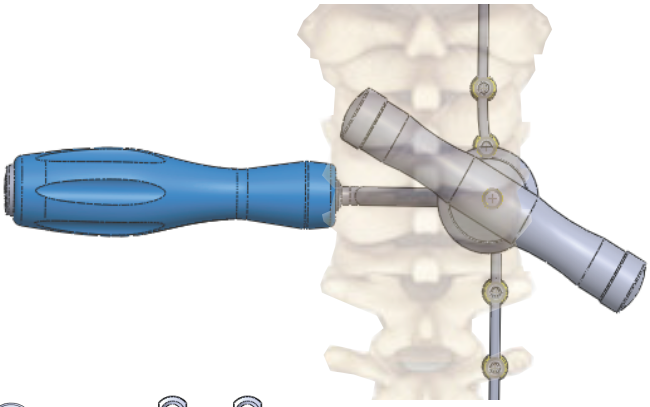


DISTRACTION / COMPRESSION

After rod placement, distraction or compressioncan be performed as needed.

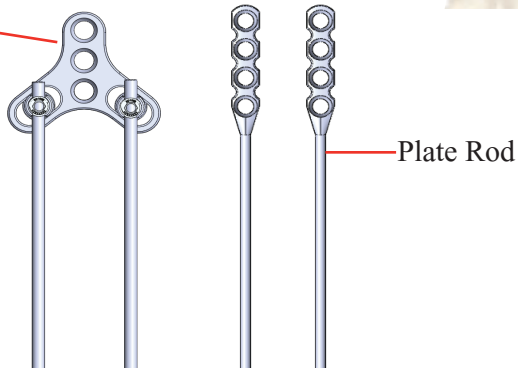
FINAL TORQUE

Use the Power Holder and the Torque Measuring Driver to final tighten the screws and hooks. The Torque Measuring Driver should be rotated until the 2 laser marks are aligned verifying 46 in-lbs. has been obtained.



OCCIPITAL

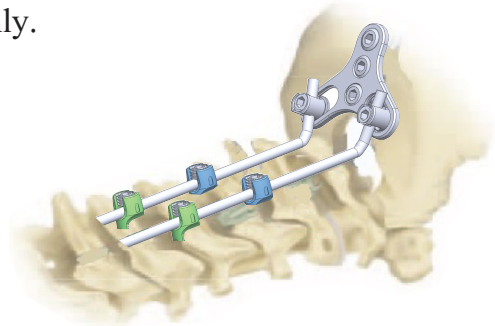
There are two sizes of Occipital Plates available as well as a Plate Rod combination that can be contoured to the Occiput.



OCCIPUT PLATES

The Occipital Plate selected should be positioned along the external Occipital Protuberance (EOP) and the posterior border of the foramen magnum. It should lie smoothly with the occiput by contouring to match by bending in one direction only.

Using the 3.2 mm Occiput Drill, set the Adjustable Stop to the desired depth and insert into the drill guide for drilling the hole. The 4.5 mm Tap can now be inserted into the drill guide and the hole tapped the correct depth by referencing the laser marks on the shaft of the tap. The laser mark indicating desired depth should be flush with the top of the drill guide.



Assemble the occiput plate with 4.5 mm cortical self tapping screws. There are 5.25 mm screws available for rescue if necessary. The same driver for the set screw is also used for insertion of the Cortical Screws.

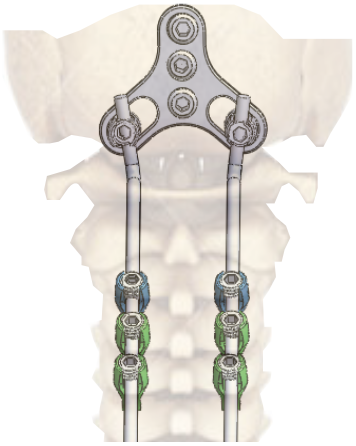
The 3.5 mm rods can now be contoured to fit the occipital plate and set screws inserted provisionally to attach to the Occipital Plate by sliding and or rotating the two attachment arms so the rods can be seated.

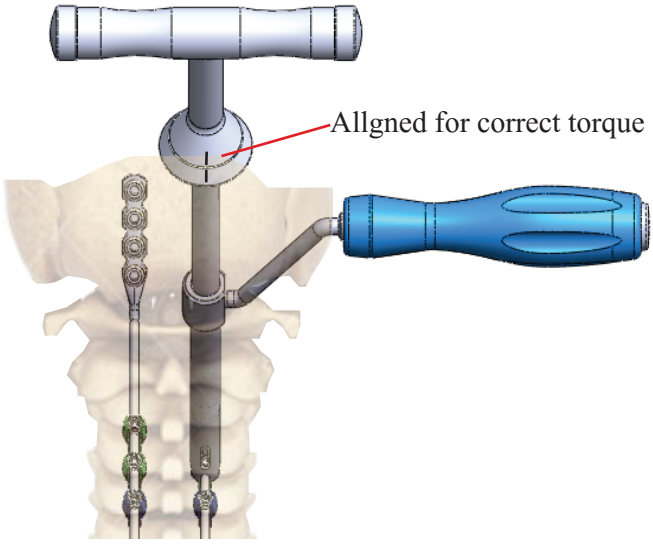
PLATE ROD

The Plate Rod which was preformed earlier, can be formed additionally using the In-Situ Rod Benders, left and right. Cortical screws can be inserted using the procedure described above for the Occipital Plates.

FINAL TORQUE

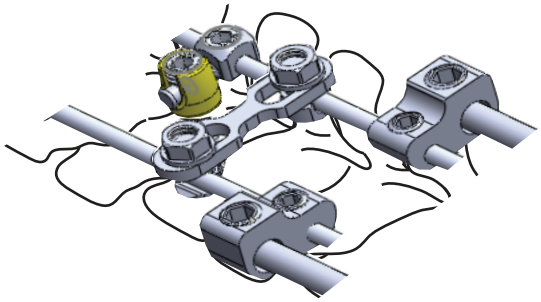
Use the Torque Measuring Driver, rotate until the two laser marks are aligned verifying 46 in-lbs. has been obtained.





TRANSVERSE LINKS

Transverse links maybe be installed to increase rigidity to the construct by inserting the hook sections to the 3.5 mm rods and tightening the nuts using the Torque Measuring Driver for Cross link.



ADDITIONAL TECHNIQUE SPECIFIC COMPONENTS

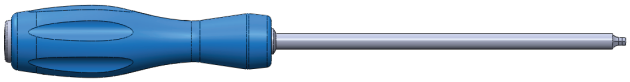
Connectors - Both Axial and Domino Connectors in 3.5 mm and 6 mm sizes are available to connect to rods or lateral connectors.

Transition Rods - described above in sizes up to 480 mm for fixation to additional levels are available.

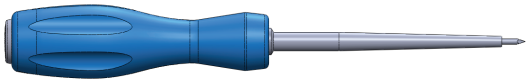
Lateral Connectors - For non-linear screws and hooks available to attach to the 3.5 mm rods.

Recheck all connections before closure to verify all components are tightened to the correct torque.

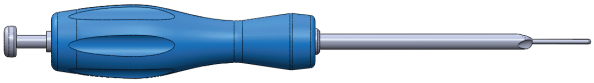
G Surgical Occipital Cervical Thoracic, OCT Instruments are provided in a 3 level autoclaveable case. All instruments are manufactured from surgical grade stainless steel, with laser engraved markings for easy identification and have silk screened graphics for placements of instruments in the autoclavable case. Anatomical silicone handles are provided for ease of use.



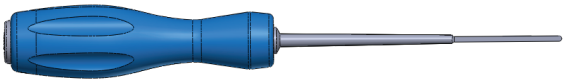
SO0330 Set Screw Inserter



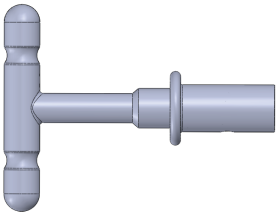
SO0310 Awl



SO0270 Depth Gauge



SO0320 Probe



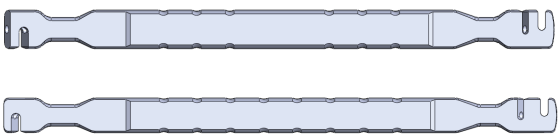
SO0300 T-Handle Quick Conncet



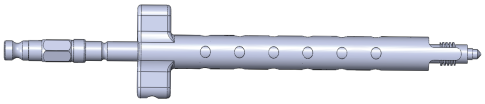
SO0290 Straight Handle Quick Conncet



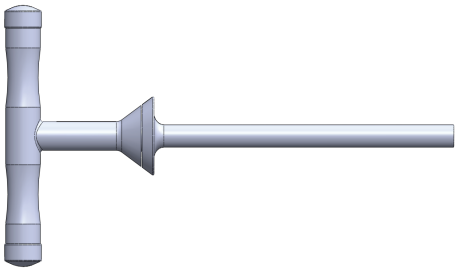
SO0480 4 mm Driver for Conncetor Set Screw



SO0130 In-Situ Rod Bender, Left
SO0140 In-Situ Rod Bender, Right



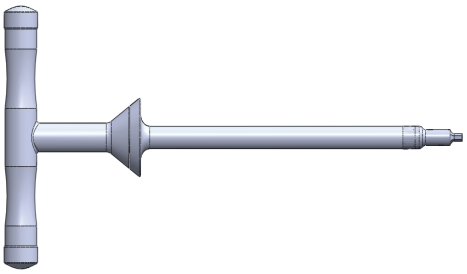
SO0070 Poly Screw Driver



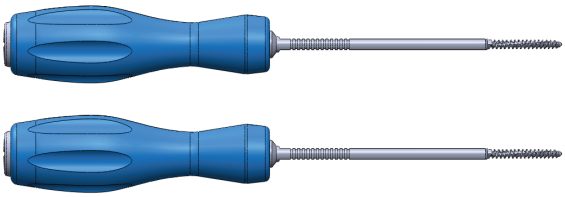
SSG0021 Torque Measuring Driver for Cross Link



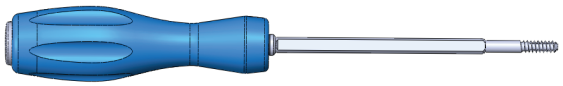
SO0190 Lamina Elevator



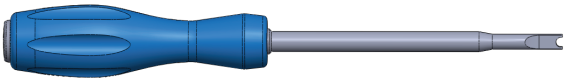
SO0340 Torque Measuring Driver 3.0 mm Hex



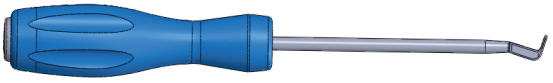
SO0050 Adjustable Tap 3.5 mm
SO0060 Adjustable Tap 4.0 mm



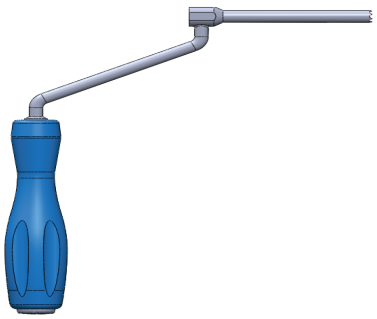
SO0045 Tap for 4.5 mm Cortical Screw



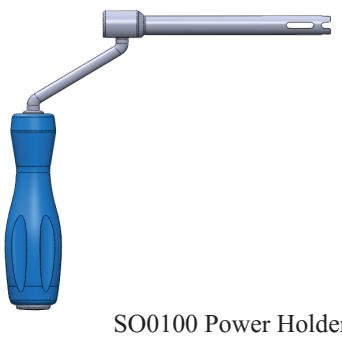
SO0240 Rod Pusher



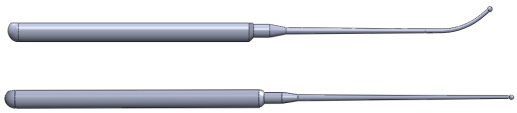
SO1009 Rod Fork



SO0010 Drill Guide



SO0100 Power Holder



SO0350 Tester, Curved
SO0360 Tester, Straight



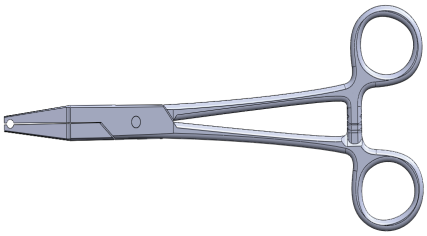
SO0020M Adjustable Drill Bit 3.5 mm
SO0040M Adjustable Drill Bit 4.0 mm



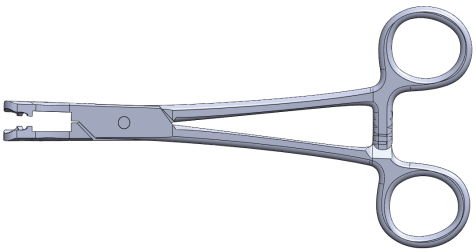
SO0230 Adjustable Stop



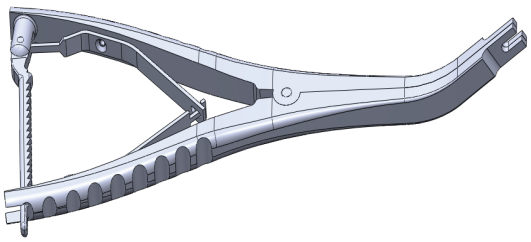
SO0470 Adjustable Drill Bit for Occiput Screw



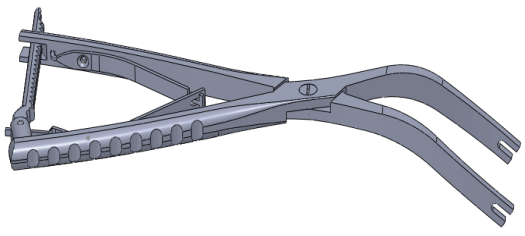
SO0170 Rod holder



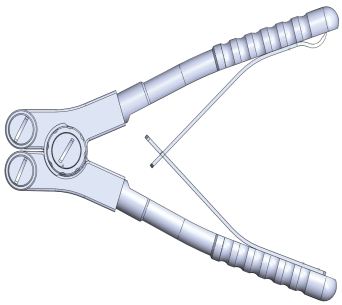
SO0180 Hook Holder



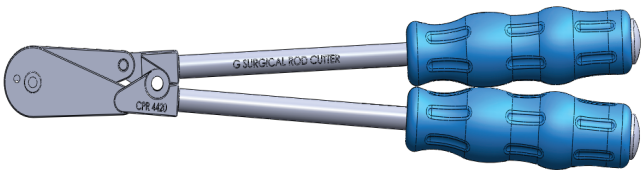
SO0110 Distractor



SO0120 Compresser



SO0150 Rod Bender



CPR4420 Rod Cutter