



## **Surgical Technique**

**Vertaux Occipital System** 

www.auxein.com

# about us

Auxein Medical is an integrated, research based, orthopaedic Implants & instruments manufacturing company, producing a wide range of quality, affordable generic implants, trusted by healthcare professionals and patients across geographies. It is the Company's constant endeavor to provide a wide basket of generic and our innovator products that exceed the highest expectations of customers in term of quality and safety. The company has world-class manufacturing unit established in india and serves customers in over 75 countries worldwide.

#### **Our Achievements**



## **Guidelines**

This publication sets forth detailed recommended procedures for using Auxein Medical devices and instruments.

It offers guidance that needs to be heeded. However, with any such technical guide, each surgeon must consider the unique needs of each patient and make appropriate adjustments when and as required.

A workshop training under DAIS Academy by Auxein will provide assistance prior to first surgery. It is vital to know that all non-sterile devices must be cleaned and sterilized before use.

Moreover, multi-component instruments must be disassembled for cleaning. The surgeon must discuss all relevant risks, including the finite lifetime of the device, with the patient, when necessary.

**Please NOTE** that all the bone screws referenced in this document here are not approved for screw attachment or fixation in the areas not mentioned in this publication.

#### Warning:

This description is not sufficient for immediate application of the instrumentation. Instruction by a surgeon experienced in handling this instrumentation is highly recommended.



Organised by: Auxein



## **Indications and Contraindications**

To provide stabilization and promote fusion of the cervical spine and occipito-cervical junction, the Vertaux Occipital System combined with the Vertaux Occipital System is used.

#### Indications

#### 1. Occipito-cervical and upper cervical spine instability:

Rheumatoid arthritis, tumours and infections, congenital anomalies, and post-traumatic conditions

#### 2. Instability in the cervical and upper thoracic spine:

Post-traumatic conditions, tumours, iatrogenic instability after laminectomy, etc.

3. Degenerative and painful post-traumatic conditions in the lower cervical and upper thoracic spine an anterior cervical fusion requiring additional posterior stabilization.

#### Contraindication

Destruction of the spine, accompanied by loss of the ventral support (caused by fractures, tumors, and infections), results in great instability of the cervical spine and upper thoracic spine. In this situation, another front of stabilisation is essential, as stabilisation with this system alone is not enough. also applied in the case of severe osteoporosis.



## **Vertaux Occipital System**

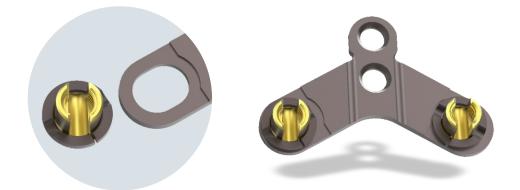
Implants and instruments designed for fixation of the occiput

The Vertaux Occipital System is intended to provide stabilisation of the occipito-cervical junction. The Vertaux Occipital System consists of a complete set of implants and instruments designed for occiput fixation and connection to the spine system.

#### **Occipital Plate**

The occipital plate is available as a medial or lateral wedge, 32mm or 37mm wide. The plate attaches to the occiput with screws.

- Bead-blasted lower surface
- Variable rod attachment body to allow for rotation and lateral or medial adjustment
- 2 mm plate profile
- Grooves for bending
- Available to support either 3.2 mm straight or pre-bent rods.



Fixation possibilities for the occiput The Vertaux Occipital System offers several implant options for fixation of the occiput.



Occipital plate, medial



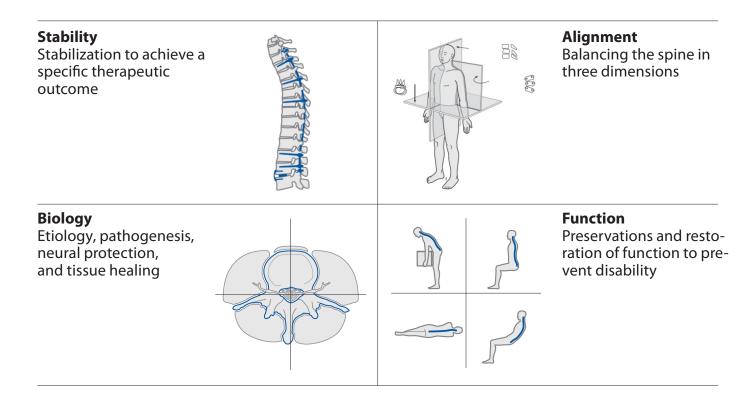
Occiput rods





## **AO Spine Principles**

The four principles to be considered as the foundation for proper spine patient management underpin the design and delivery of the curriculum: stability, alignment, biology, and function.





## Preparation

#### 1. Preparation

| IMP-SP-OCCI | VERTAUX - OCCIPITAL Implant Set                |
|-------------|--|
| SP-1358-37  | Container for Vertaux-Occipital Instrument Set |

# 

#### IMP-SP-OCCI VERTAUX - OCCIPITAL Implant Set







#### 2. Preoperative planning

Implant placement and visualised patient anatomy can be planned via the necessary imaging studies.

#### 3. Position the patient

For an accurate occipital fusion procedure, patient positioning is of the utmost importance. The patient's head should be securely immobilized, and he or she should be placed in a prone position on the operating table. Before draping, a radiograph and direct visualisation are used to confirm the correct position.

**Note:** This step is necessary for physiological alignment.

#### 4. Approach

For the fusion process, follow the standard procedure and expose the laminae of the vertebrae. to be fused with the spinous processes and the external occipital protuberance.



## **1. Occipito-Cervical Fixation with Occipital Plate**

Upper thoracic spine and cervical spine fixation required Set:

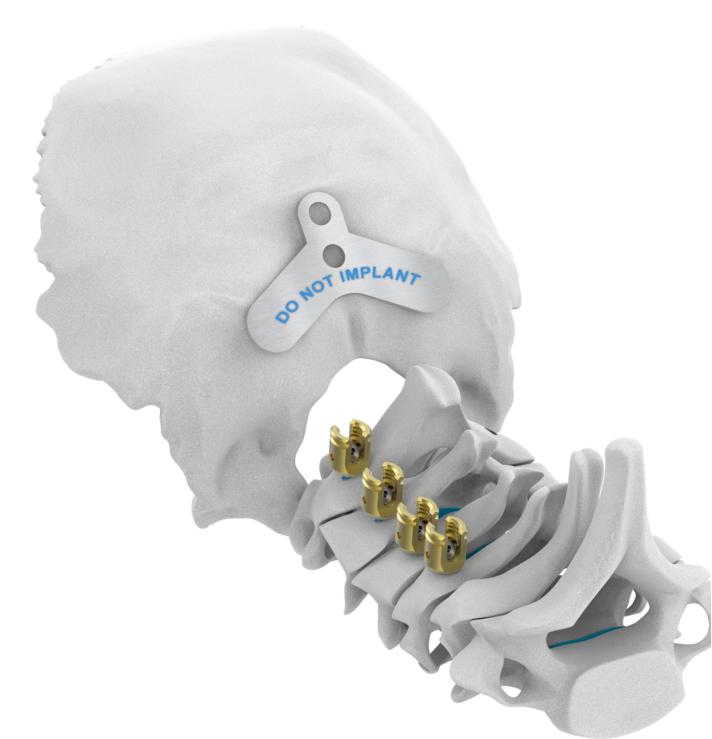
VERTAUX: Occipital Polyaxial Pedicle Screw, 3.5mm with Partial Thread (4-085-10TI) According to the patient's pathology, insert bone screws into the upper thoracic spine and the cervical. This technique is described in Vertaux Pedicle Surgical Technique.





## 2. Determine shape and size of occipital plate

Determine the size and shape of the occipital plate. Select a bending template of the plate style calculated to best fit the occiput. Estimate the medial/lateral distance of the rods to determine the accurate plate size. To fit the anatomy, contour the plate template.







## 3. Plate placement

Use the Plate Hook Forcep **SP-1358-23** to hold and inplace the Vertaux occipital plate.





## 4. Drill pilot hole

Mount the drill and tap the sleeve to the required depth.

Drilling must occur through the occipital plate to ensure proper drilling depth. **SP-1358-01** Occipital System Awl **SP-1358-23** Plate Hook Forcep **SP-1358-32** Double Drill Guide, 10/12mm

#### Additional:

SP-1358-31 Double Drill Guide, 6/8 mm

Mount the **SP-1358-32** Double Drill Guide (Double Drill Guide, Ø6/8mm) on the plate. Use the Awl for Occipital System **SP-1358-01** to make a pilot hole on the occiput bone. The Pilot hole helps to prevent displacement of drill bit during initial insertion. The pilot hole faciliates further process like drilling, tapping without spliting the bone.

#### Warning:

 Ensure that the plate is correctly positioned according to the patient's anatomy before drilling.
 Drill to the desired trajectory and depth using the drill bit and double drill guide.



## 5. Drilling

For occipital fixation, 4.0mm (6,8,10 and 12mm lengths) and 4.5mm (6,8,10 and 12mm lengths) diameter Occipital Bone Screws are available. Select the appropriate drill bit and tap that match the desired screw diameter for occipital fixation.

Select and Couple the desirable drill bit into the quick coupling handle. Mount the drill guide into the plate and facilitate the drill bit into the pilot hole. Drill to desired depth & plate trajectory using drill guide

#### Instruments:

- SP-1358-28 Quick Coupling Handle, Straight, for Occipital System
- SP-1358-03 Drill Bit, Ø2.4mm x Length 12mm
- SP-1358-04 Drill Bit, Ø2.4mm x Length 14mm
- SP-1358-05 Drill Bit, Ø2.4mm x Length 16mm
- SP-1358-02 Drill Guide for 2.4mm Drill Bit

#### **Additional Instrument:**

SP-1358-06 2.4mm Adjustable Drill Bit



## 6. Determine screw size

To confirm the hole depth, use the depth gauge and select the corresponding screw length. Place the depth gauge directly on the bone.

**Note:** The working length is indicated by the depth gauge. For example, if the measurement is 10 mm on the gauge, select a 10 mm screw. The length indicated on the gauge includes the depth of the bone and the thickness of the plate.

SP-1358-10 Depth Gauge measuring upto 50mm for Occipital System



Warning: Use caution when determining the screw length and do not insert the depth gauge beyond the bone edge.



## 7. **Tap**

A tap, drill, and tapping sleeve are required for tapping at the desired depth.

#### Warning:

A tap must be conducted through the occipital plate to secure the right tapping depth.

#### **Precaution:**

Tapping should be conducted for all occipital screws.

Mount the tap into the quick coupling handle & initiate tapping in the drilled hole. the desirable tapping depth can be controlled using double drill guide.

#### Instruments:

SP-1358-09 3.5mm Cortical TapSP-1358-28 Quick Coupling Handle, Straight, for Occipital System



## 8. Insert Screw

Take the selected 4.0 mm occipital screw from the screw rack and load it. Insert the screw and tighten it temporarily.

Note: Use 4.5 mm occipital screw if the primary screw is not the right fit.

Use the SP-1358-20 Screwdriver, Hex 3.0mm, for Occipital System used to insert the selected screw. For stability, use the holding forceps, as they provide axial force.





## Optional

Take the selected 4.0 mm occipital screw from the screw rack and load it. Insert the screw and tighten it temporarily.

Note: Use a 4.5. mm occipital screw if the primary screw is not the right fit.

As a substitute, a **SP-1358-35** Flexible Screwdriver, Hex 3.0mm, for Occipital System may be used to insert the selected screw.

For stability, use the holding forceps, as they provide axial force.



## 9. Insert remaining screws

Repeat steps 4 through 7 in identical order to fix the second occipital screw.





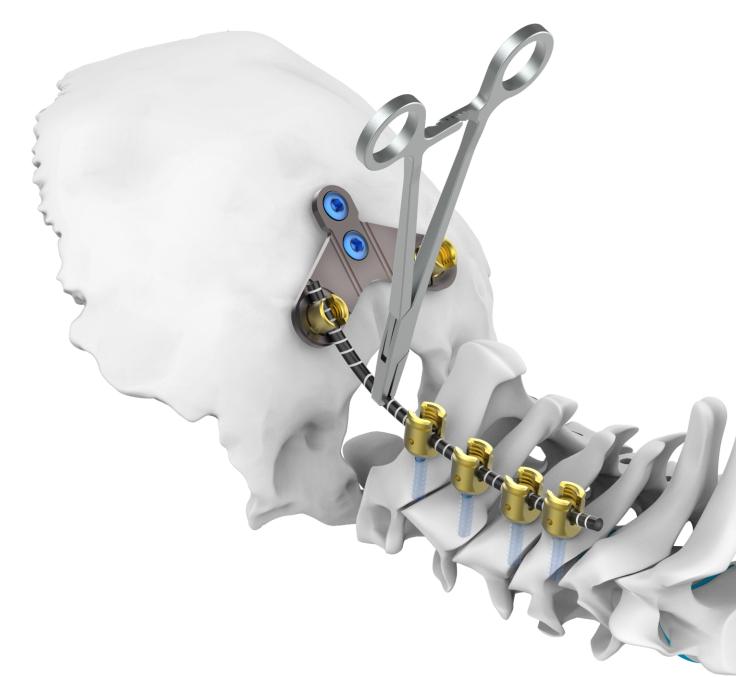
## 10. Contour trial rod

Contour the trial rod to fit the anatomy and fully seat the bone screws. Execute the occipital-cervical bend and confirm adequate rod length to join with the occipital plate.

While using the device for occipital angles, move the template into the saddle of the occipital plate and pivot the opposite arm until it matches the anatomy as required. To read the required angle indicated, completely remove the template.

SP-1358-18 3.0mm Rod Holding Forcep

**SP-1358-12** 3.0mm Template







## 11. Bend and cut rod

Use the Rod Bender Forcep to contour the rod to match the curve of the trial rod. The Vertaux Occipital Straight Rod Ø3.2mm rod can be bent using the bending pliers. Chop the rod with the cutting pliers if needed to get the appropriate length. Bending the rod repeatedly and in reverse can weaken it.

#### SP-1358-15 Rod Bender Forcep

#### VERTAUX - Occipital Straight Rod, Ø3.2mm

| Code    | Dia X Length |
|---------|--------------|
| SP-1342 | Ø3.2 × 70mm  |
| SP-1343 | Ø3.2 × 120mm |
| SP-1344 | Ø3.2 × 200mm |





## 12. Rod attachment

Rod placement and locking screw insertion can be facilitated using the positioning instrument. Place the rod into the rod attachment body. Make sure that the rod extends slightly past the end of the plate. Make sure to tighten up the locking screw using a power tool or manual equipment. The forceps can hold both 3.5 mm and 4.0 mm rods.





## 13. Rod fixation

Secure the inner cap screw into the screw driver and Loosely fasten the locking screws. When inserting the locking screws, they may be turned one quarter to one-half turn counterclockwise to seat the thread before tightening

SP-1358-36 Screwdriver, Hex 2.0mm, for Occipital System





## **Rod fixation**

Use the rod pusher to introduce the rod into the variable axis head of VERTAUX - Occipital Polyaxial Pedicle Screw. Place the **SP-1358-21** Counter Torque Rod Pusher over the rod and onto the variable axis head until the tip of the instrument sits below the screw head reduction feature.

Place the reduction forcep for occipital system on to the head of the screw. Make sure that the tip of the reduction forcep fits nicely onto the slot on the screw body beneath screw head top. Fit the inner screw into the elastic screw and introduct this rod into the reduction forcep.

Squeeze the handle to engage the instrument and Loosely fasten the locking screws using the elastic screw holder through the cannulation of the reduction instrument. When inserting the locking screws, they may be turned on e-quarter to one-half turn counterclockwise to seat the thread before tightening.

Remove the elastic screw driver from the reduction forcep. De-squeeze the handle and remove the instrument from screw driver. Use the **SP-1358-36** Screwdriver, Hex 2.0mm, for Occipital System for final tightening of the inner screw.

#### Instruments:

SP-1358-26 Reduction Forcep for Occipital System
SP-1358-19 Elastic Screw Holder, Hex 3.0mm
SP-1358-21 Counter Torque Rod Pusher
SP-1358-36 Screwdriver, Hex 2.0mm, for Occipital System

- Elastic Screw Holder, Hex 3.0mm
- Reduction Forcep for Occipital System



## 14. Locking Inner Cap of Pedicle Screw

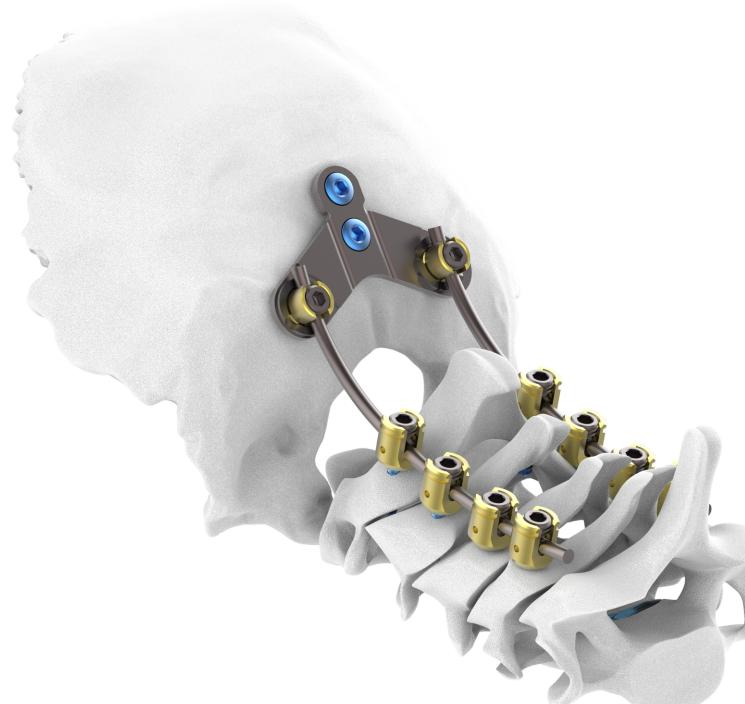
Use the SP-1358-36 Screwdriver, Hex 2.0mm, for Occipital System for final tightening of the inner screw





## 15. Final tightening

Tighten all occipital and locking screws completely with a power tool or manual tool with a handle and quick coupling. To provide counter-torque for tightening the locking screws, the positioning instrument may be used. Alternatively, the screwdriver shaft with cardan joint may be used for the final tightening of the occipital and locking screws. To provide stability and axial force, use the holding forceps. Use positioning equipment to provide counter-torque for tightening up the locking screws.

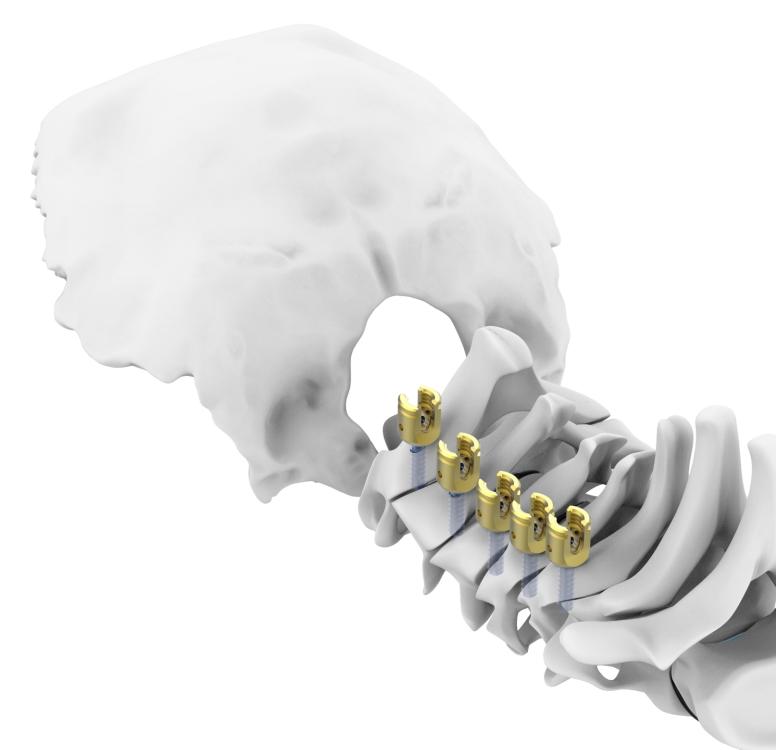




## **Occipito-Cervical Fixation with Occipital Pre Bent Rod**

#### 1. Fixation to the cervical and upper thoracic spine

Insert bone screws and/or hooks into the cervical and upper thoracic spine as required by the patient's pathology.





## 3. Bend and cut rod

Contour the rod using the bending pliers to match the curve of the trial rod. The bending pliers can be used for both 3.2 mm rod. Cut the rod with the cutting pliers to the appropriate length. Warning: Repeated or reverse bending may weaken the rod.

#### 3. Bend and cut occipital rod

Contour the occiput rod using the bending pliers to match the curve of the occiput trial rod. The bending pliers can be used for both 3.2 mm. Cut the rod with the cutting pliers to the appropriate length.

Warning: Repeated or reverse bending may weaken the rod.



## 4. Drill pilot hole/Awl

Mount the drill and tap the sleeve to the required depth.

Drilling must occur through the occipital plate to ensure proper drilling depth. **SP-1358-01** Occipital System Awl

SP-1358-23 Plate Hook Forcep

**SP-1358-32** Double Drill Guide, 10/12mm

#### Additional:

SP-1358-31 Double Drill Guide, 6/8 mm

Mount the **SP-1358-32** Double Drill Guide (Double Drill Guide, Ø6/8mm) on the plate. Use the Awl for Occipital System **SP-1358-01** to make a pilot hole on the occiput bone. The Pilot hole helps to prevent displacement of drill bit during initial insertion. The pilot hole faciliates further process like drilling, tapping without spliting the bone.

#### Warning:

 Ensure that the plate is correctly positioned according to the patient's anatomy before drilling.
 Drill to the desired trajectory and depth using the drill bit and double drill guide.



## 4. Drilling

For occipital fixation, 4.0mm (6,8,10 and 12mm lengths) and 4.5mm (6,8,10 and 12mm lengths) diameter Occipital Bone Screws are available. Select the appropriate drill bit and tap that match the desired screw diameter for occipital fixation.

Select and Couple the desirable drill bit into the quick coupling handle. Mount the drill guide into the plate and facilitate the drill bit into the pilot hole. Drill to desired depth & plate trajectory using drill guide

#### Instruments:

- **SP-1358-28** Quick Coupling Handle, Straight, for Occipital System
- **SP-1358-29** 3.0mm Drill Bit





## 5. Measure hole depth

To confirm the hole depth, use the depth gauge and select the corresponding screw length. Place the depth gauge directly on the bone.

**Note:** The working length is indicated by the depth gauge. For example, if the measurement is 10 mm on the gauge, select a 10 mm screw. The length indicated on the gauge includes the depth of the bone and the thickness of the plate.

**SP-1358-10** Depth Gauge measuring upto 50mm for Occipital System



## 7. Tap

A tap, drill, and tapping sleeve are required for tapping at the desired depth.

#### Warning:

A tap must be conducted through the occipital plate to secure the right tapping depth.

#### **Precaution:**

Tapping should be conducted for all occipital screws.

Mount the tap into the quick coupling handle & initiate tapping in the drilled hole. the desirable tapping depth can be controlled using double drill guide.

#### Instruments:

- **SP-1358-30** Tap,Ø4.0mm
- **SP-1358-28** Quick Coupling Handle, Straight, for Occipital System
- SP-1358-31 Double Drill Guide, Ø6/8mm
- **SP-1358-32** Double Drill Guide, Ø10/12mm



## 7. Insert screw

Load the selected 4.5 mm occipital screw from the screw rack. Insert the screw and tighten it provisionally.

**SP-1358-20** Screwdriver, Hex 3.0mm, for Occipital System







## Optional

Load the selected 4.5 mm occipital screw from the screw rack. Insert the screw and tighten it provisionally.

**SP-1358-35** Flexible Screwdriver, Hex 3.0mm, for Occipital System





## **Inserting the inner screw**

Use the rod pusher to introduce the rod into the variable axis head of VERTAUX -Occipital Polyaxial Pedicle Screw. Place the **SP-1358-21** Counter Torque Rod Pusher over the rod and onto the variable axis head until the tip of the instrument sits below the screw head reduction feature.

Place the reduction forcep for occipital system on to the head of the screw. Make sure that the tip of the reduction forcep fits nicely onto the slot on the screw body beneath screw head top. Fit the inner screw into the elastic screw and introduct this rod into the reduction forcep.

Squeeze the handle to engage the instrument and Loosely fasten the locking screws using the elastic screw holder through the cannulation of the reduction instrument. When inserting the locking screws, they may be turned on e-quarter to one-half turn counterclockwise to seat the thread before tightening.

Remove the elastic screw driver from the reduction forcep. De-squeeze the handle and remove the instrument from screw driver. Use the **SP-1358-36** Screwdriver, Hex 2.0mm, for Occipital System for final tightening of the inner screw.

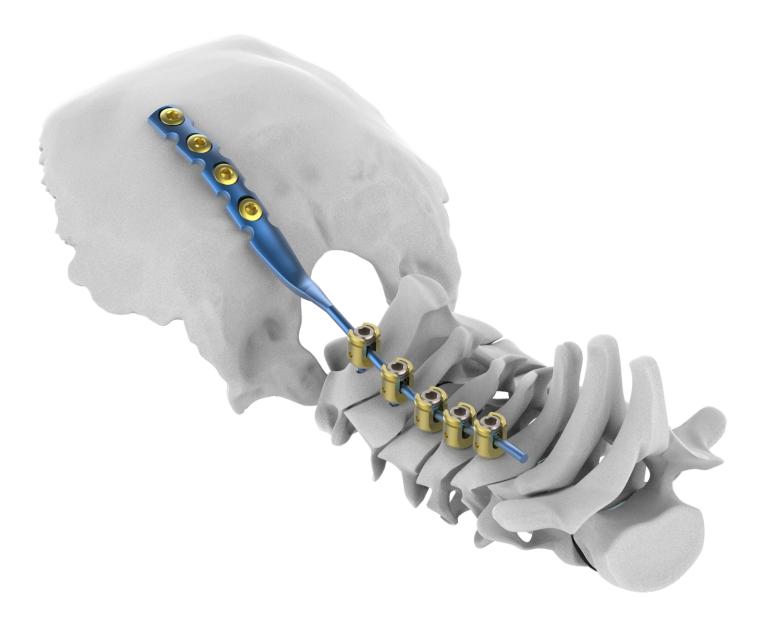
#### Instruments:

- SP-1358-26 Reduction Forcep for Occipital System
- **SP-1358-19** Elastic Screw Holder, Hex 3.0mm
- **SP-1358-21** Counter Torque Rod Pusher
- SP-1358-36 Screwdriver, Hex 2.0mm, for Occipital System
- Elastic Screw Holder, Hex 3.0mm
- Reduction Forcep for Occipital System



#### 8. Insert remaining screws

Repeat steps 4–7 to insert the remaining screws.



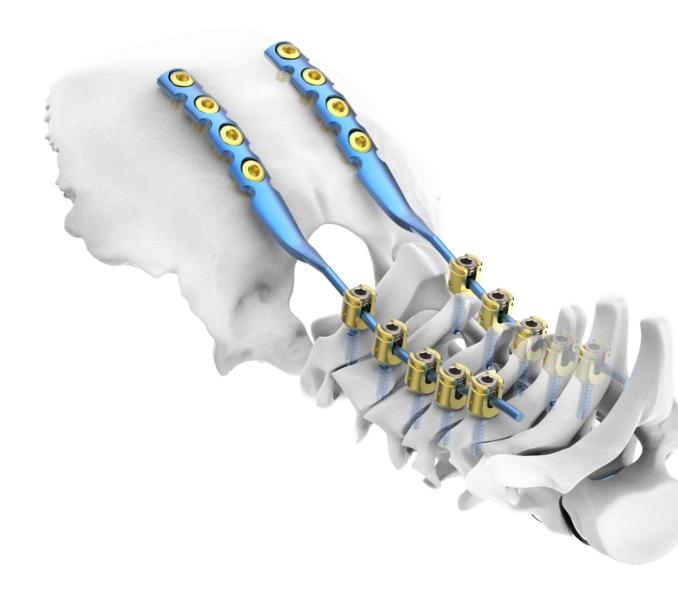
## 9. Insert second occiput rod and corresponding screws

Repeat steps 2–8 to insert the second occiput rod and corresponding screws.



#### **10. Final tightening**

Firmly tighten all occipital screws using the screwdriver shaft with the handle connected by a quick coupling.



For final tightening of the occipital screws, use the screwdriver shaft with cardan joint. Use the holding forceps to provide axial force and stability.





# VERTAUX - Occipital Polyaxial Pedicle Screw, Ø3.5mm

| Code    | Dia X Length  |
|---------|---------------|
| SP-1317 | Ø3.5mm × 10mm |
| SP-1319 | Ø3.5mm × 12mm |
| SP-1320 | Ø3.5mm × 14mm |
| SP-1321 | Ø3.5mm × 16mm |
| SP-1322 | Ø3.5mm × 18mm |
| SP-1323 | Ø3.5mm × 20mm |
| SP-1324 | Ø3.5mm × 22mm |
| SP-1325 | Ø3.5mm × 24mm |
| SP-1326 | Ø3.5mm × 26mm |
| SP-1327 | Ø3.5mm × 28mm |
| SP-1328 | Ø3.5mm × 30mm |
| SP-1610 | Ø3.5mm × 32mm |
| SP-1619 | Ø3.5mm × 34mm |
| SP-1611 | Ø3.5mm × 36mm |
| SP-1612 | Ø3.5mm × 38mm |
| SP-1613 | Ø3.5mm × 40mm |



# VERTAUX - Occipital Polyaxial Pedicle Screw, Ø4.0mm

| Code    | Dia X Length  |
|---------|---------------|
| SP-1388 | Ø4.0mm x 10mm |
| SP-1329 | Ø4.0mm x 12mm |
| SP-1330 | Ø4.0mm x 14mm |
| SP-1331 | Ø4.0mm x 16mm |
| SP-1332 | Ø4.0mm x 18mm |
| SP-1333 | Ø4.0mm x 20mm |
| SP-1334 | Ø4.0mm x 22mm |
| SP-1335 | Ø4.0mm x 24mm |
| SP-1336 | Ø4.0mm x 26mm |
| SP-1337 | Ø4.0mm x 28mm |
| SP-1338 | Ø4.0mm x 30mm |
| SP-1614 | Ø4.0mm x 32mm |
| SP-1618 | Ø4.0mm x 34mm |
| SP-1615 | Ø4.0mm x 36mm |
| SP-1616 | Ø4.0mm x 38mm |
| SP-1617 | Ø4.0mm x 40mm |





# VERTAUX - Occipital Polyaxial Pedicle Screw, Partial Thread, Ø3.5mm

| Code       | Dia X Length  | Partial Thread<br>Length |
|------------|---------------|--------------------------|
| 4-085-10TI | Ø3.5mm × 10mm | 5mm                      |
| 4-085-12TI | Ø3.5mm × 12mm | 5mm                      |
| 4-085-14TI | Ø3.5mm × 14mm | 5mm                      |
| 4-085-16TI | Ø3.5mm × 16mm | 6mm                      |
| 4-085-18TI | Ø3.5mm × 18mm | 7mm                      |
| 4-085-20TI | Ø3.5mm × 20mm | 8mm                      |
| 4-085-22TI | Ø3.5mm × 22mm | 9mm                      |
| 4-085-24TI | Ø3.5mm × 24mm | 10mm                     |
| 4-085-26TI | Ø3.5mm × 26mm | 12mm                     |
| 4-085-28TI | Ø3.5mm × 28mm | 14mm                     |
| 4-085-30TI | Ø3.5mm × 30mm | 14mm                     |
| 4-085-32TI | Ø3.5mm × 32mm | 14mm                     |
| 4-085-34TI | Ø3.5mm × 34mm | 14mm                     |
| 4-085-36TI | Ø3.5mm × 36mm | 14mm                     |
| 4-085-38TI | Ø3.5mm × 38mm | 14mm                     |
| 4-085-40TI | Ø3.5mm × 40mm | 14mm                     |



# VERTAUX - Occipital Polyaxial Pedicle Screw, Partial Thread, Ø4.0mm

| Code       | Dia X Length  | Partial Thread<br>Length |
|------------|---------------|--------------------------|
| 4-086-10TI | Ø4.0mm x 10mm | 5mm                      |
| 4-086-12TI | Ø4.0mm x 12mm | 5mm                      |
| 4-086-14TI | Ø4.0mm x 14mm | 5mm                      |
| 4-086-16TI | Ø4.0mm x 16mm | 6mm                      |
| 4-086-18TI | Ø4.0mm x 18mm | 7mm                      |
| 4-086-20TI | Ø4.0mm x 20mm | 8mm                      |
| 4-086-22TI | Ø4.0mm x 22mm | 9mm                      |
| 4-086-24TI | Ø4.0mm x 24mm | 10mm                     |
| 4-086-26TI | Ø4.0mm x 26mm | 12mm                     |
| 4-086-28TI | Ø4.0mm x 28mm | 14mm                     |
| 4-086-30TI | Ø4.0mm x 30mm | 14mm                     |
| 4-086-32TI | Ø4.0mm x 32mm | 14mm                     |
| 4-086-34TI | Ø4.0mm x 34mm | 14mm                     |
| 4-086-36TI | Ø4.0mm x 36mm | 14mm                     |
| 4-086-38TI | Ø4.0mm x 38mm | 14mm                     |
| 4-086-40TI | Ø4.0mm x 40mm | 14mm                     |





Hexagonal Head

Large



# VERTAUX - Occipital Inner Screw Cap

| Code    | Product Specification |
|---------|-----------------------|
| SP-1339 | M6                    |

# VERTAUX - Occipital Pre Bent Rod

| Code    | Dia    |
|---------|--------|
| SP-1318 | Ø3.2mm |



Small

## **VERTAUX - Occipital Laminar Hook**

| Code    | Product Specification |
|---------|-----------------------|
| SP-1340 | Small                 |
| SP-1341 | Large                 |



| Code    | Dia X Length |
|---------|--------------|
| SP-1342 | Ø3.2 × 70mm  |
| SP-1343 | Ø3.2 × 120mm |
| SP-1344 | Ø3.2 × 200mm |

# **VERTAUX - Occipital Crosslink**

| Code    | Length |
|---------|--------|
| SP-1345 | 60mm   |



# **Universal Connector**



5.5mm Rod for Vertaux Pedicle System



# VERTAUX - Occipital Lateral Offset Connector

| Code    | Dia X Length  |
|---------|---------------|
| SP-1346 | Ø3.2mm x 12mm |

# **VERTAUX - Occipital Plate**

| Code    | Length |
|---------|--------|
| SP-1347 | 32mm   |
| SP-1348 | 37mm   |





# VERTAUX - Occipital Pre Bent Rod for Plate

| Code    | Dia X Length   |
|---------|----------------|
| SP-1349 | Ø3.2mm x 160mm |



# VERTAUX - Occipital Screw, Ø4.0mm

|         | 1             |
|---------|---------------|
| Code    | Dia X Length  |
| SP-1350 | Ø4.0mm x 6mm  |
| SP-1351 | Ø4.0mm x 8mm  |
| SP-1352 | Ø4.0mm x 10mm |
| SP-1353 | Ø4.0mm x 12mm |

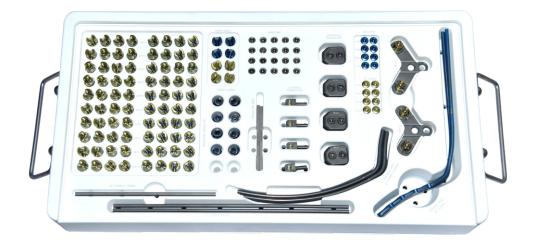
## VERTAUX - Occipital Screw, Ø4.5mm

| Code    | Dia X Length  |
|---------|---------------|
| SP-1354 | Ø4.5mm x 6mm  |
| SP-1355 | Ø4.5mm x 8mm  |
| SP-1356 | Ø4.5mm x 10mm |
| SP-1357 | Ø4.5mm x 12mm |









# IMP-SP-OCCI VERTAUX - OCCIPITAL Implant Set

| Code    | Product Specification  | Qty. |
|---------|--|------|
| SP-1319 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 3.5 × Length 12mm       | 4    |
| SP-1320 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 3.5 × Length 14mm       | 4    |
| SP-1321 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 3.5 × Length 16mm       | 4    |
| SP-1322 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 3.5 × Length 18mm       | 4    |
| SP-1323 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 3.5 × Length 20mm       | 4    |
| SP-1324 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 3.5 $	imes$ Length 22mm | 4    |
| SP-1325 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 3.5 $	imes$ Length 24mm | 4    |
| SP-1326 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 3.5 $	imes$ Length 26mm | 4    |
| SP-1327 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 3.5 × Length 28mm       | 4    |
| SP-1328 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 3.5 × Length 30mm       | 4    |
| SP-1329 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 4.0 × Length 12mm       | 4    |
| SP-1330 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 4.0 × Length 14mm       | 4    |
| SP-1331 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 4.0 × Length 16mm       | 4    |
| SP-1332 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 4.0 × Length 18mm       | 4    |
| SP-1333 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 4.0 × Length 20mm       | 4    |
| SP-1334 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 4.0 × Length 22mm       | 4    |
| SP-1335 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 4.0 × Length 24mm       | 4    |
| SP-1336 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 4.0 × Length 26mm       | 4    |
| SP-1337 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 4.0 × Length 28mm       | 4    |
| SP-1338 | Vertaux - Occipital Polyaxial Pedicle Screw, Ø 4.0 × Length 30mm       | 4    |
| SP-1340 | Vertaux Occipital Laminar Hook, Small                                  | 4    |
| SP-1341 | Vertaux Occipital Laminar Hook, Large                                  | 4    |
| SP-1339 | Vertaux Occipital Inner Screw Cap(M6)                                  | 20   |
| SP-1318 | Vertaux - Occipital Pre Bent Rod, Ø 3.2mm, Titanium                    | 2    |

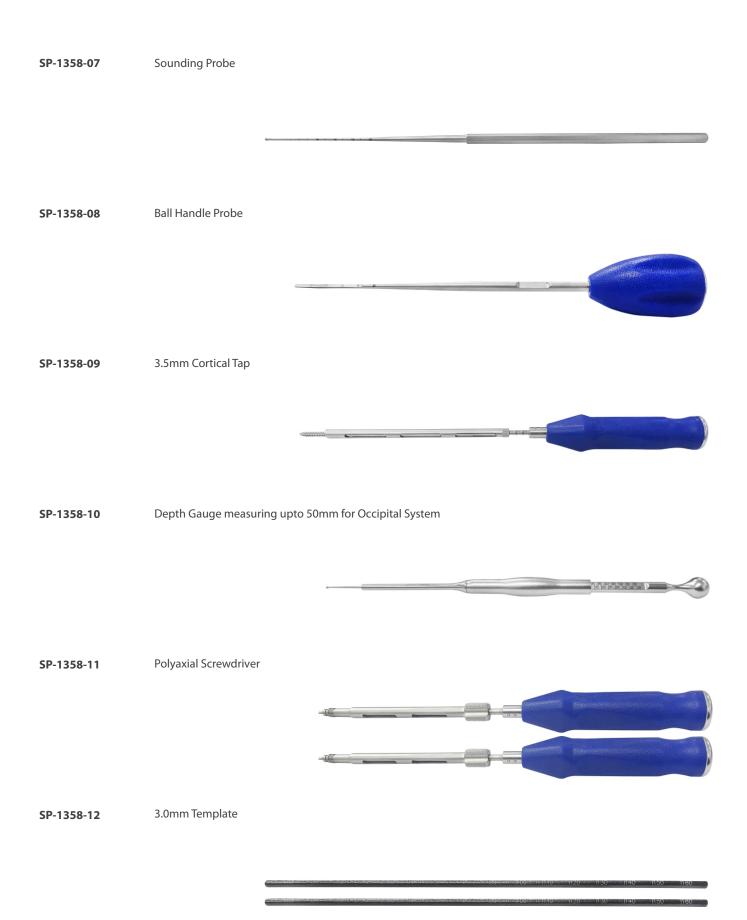


| Code     | Product Specification  | Qty |
|----------|--|-----|
| SP-1342  | Vertaux - Occipital Straight Rod, Ø 3.2mm x Length 70mm            | 2   |
| SP-1343  | Vertaux - Occipital Straight Rod, Ø 3.2mm x Length 120mm           | 2   |
| SP-1344  | Vertaux - Occipital Straight Rod, Ø 3.2mm x Length 200mm           | 2   |
| SP-1346  | Vertaux - Occipital Lateral Offset Connector, Ø3.2mm x Length 12mm | 4   |
| SP-1345  | Vertaux - Occipital Crosslinks, Length 60mm                        | 10  |
| SP-1350  | Vertaux - Occipital screw, Ø4.0mm x Length 6mm                     | 2   |
| SP-1351  | Vertaux - Occipital screw, Ø4.0mm x Length 8mm                     | 2   |
| SP-1352  | Vertaux - Occipital screw, Ø4.0mm x Length 10mm                    | 2   |
| SP-1353  | Vertaux - Occipital screw, Ø4.0mm x Length 12mm                    | 2   |
| SP-1354  | Vertaux - Occipital screw, Ø4.5mm x Length 6mm                     | 2   |
| SP-1355  | Vertaux - Occipital screw, Ø4.5mm x Length 8mm                     | 2   |
| SP-1356  | Vertaux - Occipital screw, Ø4.5mm x Length 10mm                    | 2   |
| SP-1357  | Vertaux - Occipital screw, Ø4.5mm x Length 12mm                    | 2   |
| SP-1358  | Universal Connector  | 4   |
| SP-1347  | Vertaux - Occipital Plate, Length 32mm                             | 1   |
| SP-1348  | Vertaux - Occipital Plate, Length 37mm                             | 1   |
| SP-1349  | Vertaux - Occipital Pre Bent Rod for Plate, Ø3.2mm x Length 160mm  | 2   |
| 4-015-01 | Tray for VERTAUX - OCCIPITAL Implant Set                           | 1   |

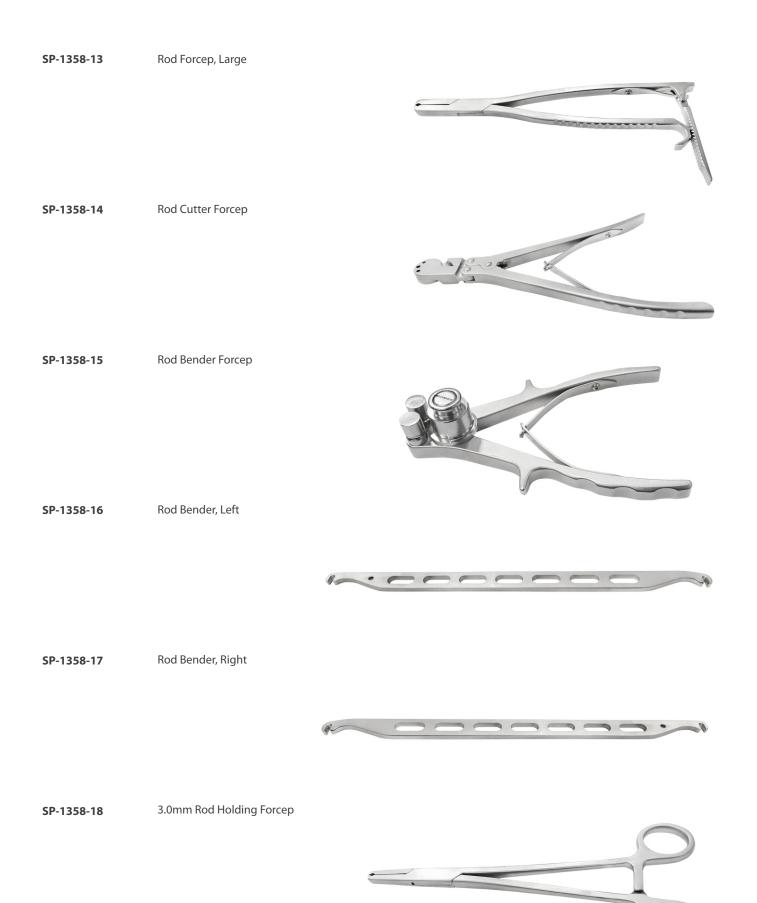


Awl for Occipital System SP-1358-01 SP-1358-02 Drill Guide for 2.4mm Drill Bit Drill Bit, Ø2.4mm x Length 12mm SP-1358-03 \$2.4x16 SP-1358-04 Drill Bit, Ø2.4mm x Length 14mm \$2.4x16 SP-1358-05 Drill Bit, Ø2.4mm x Length 16mm 2.4mm Adjustable Drill Bit SP-1358-06















# **Vertaux Occipital System**

| SP-1358-25 | Compressor for Occipital System                       |
|------------|---|
| SP-1358-26 | Reduction Forcep for Occipital System                 |
|            |   |
| SP-1358-27 | T-Handle with Quick Coupling for Occipital System     |
| SP-1358-28 | Quick Coupling Handle, Straight, for Occipital System |
|            |   |
| SP-1358-29 | 3.0mm Drill Bit                                       |
|            |   |
|            |   |

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**SP-1358-30** Tap, Ø4.0mm

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| SP-1358-31 | Double Drill Guide, Ø6/8mm                            |
|------------|---|
|            |   |
| SP-1358-32 | Double Drill Guide, Ø10/12mm                          |
|            |   |
| SP-1358-33 | Marker, Left  |
| SP-1358-34 | Marker, Right   |
| 51 1550 54 | CE A 11895  |
| SP-1358-35 | Flexible Screwdriver, Hex 3.0mm, for Occipital System |
|            |   |
| SP-1358-36 | Screwdriver, Hex 2.0mm, for Occipital System          |





#### SP-1358-39

Instrument Tray Vertaux-Occipital Instrument Set



#### SP-1358-37

Container for Vertaux-Occipital Instrument Set







# SP-1358-000 VERTAUX - Occipital Instrument Set



# SP-1358-000 VERTAUX - Occipital Instrument Set

| Code       | Set Consisting of                                     | Qty. |
|------------|---|------|
| SP-1358-01 | Awl for Occipital System                              | 1    |
| SP-1358-02 | Drill Guide for 2.4mm Drill Bit                       | 1    |
| SP-1358-03 | Drill Bit, Ø2.4mm x Length 12mm                       | 1    |
| SP-1358-04 | Drill Bit, Ø2.4mm x Length 14mm                       | 1    |
| SP-1358-05 | Drill Bit, Ø2.4mm x Length 16mm                       | 1    |
| SP-1358-06 | 2.4mm Adjustable Drill Bit                            | 1    |
| SP-1358-07 | Sounding Probe  | 1    |
| SP-1358-08 | Ball Handle Probe                                     | 1    |
| SP-1358-09 | 3.5mm Cortical Tap                                    | 1    |
| SP-1358-10 | Depth Gauge measuring upto 50mm for Occipital System  | 1    |
| SP-1358-11 | Polyaxial Screwdriver                                 | 2    |
| SP-1358-12 | 3.0mm Template  | 2    |
| SP-1358-13 | Rod Forcep, Large                                     | 1    |
| SP-1358-14 | Rod Cutter Forcep                                     | 1    |
| SP-1358-15 | Rod Bender Forcep                                     | 1    |
| SP-1358-16 | Rod Bender, Left                                      | 1    |
| SP-1358-17 | Rod Bender, Right                                     | 1    |
| SP-1358-18 | 3.0mm Rod Holding Forcep                              | 1    |
| SP-1358-19 | Elastic Screw Holder, Hex 3.0mm                       | 2    |
| SP-1358-20 | Screwdriver, Hex 3.0mm, for Occipital System          | 2    |
| SP-1358-21 | Counter Torque Rod Pusher                             | 1    |
| SP-1358-22 | Hook Probe  | 1    |
| SP-1358-23 | Plate Hook Forcep                                     | 1    |
| SP-1358-24 | Distractor for Occipital System                       | 1    |
| SP-1358-25 | Compressor for Occipital System                       | 1    |
| SP-1358-26 | Reduction Forcep for Occipital System                 | 1    |
| SP-1358-27 | T-Handle with Quick Coupling for Occipital System     | 1    |
| SP-1358-28 | Quick Coupling Handle, Straight, for Occipital System | 1    |
| SP-1358-29 | 3.0mm Drill Bit                                       | 2    |
| SP-1358-30 | Tap, Ø4.0mm   | 1    |
| SP-1358-31 | Double Drill Guide, Ø6/8mm                            | 1    |
| SP-1358-32 | Double Drill Guide, Ø10/12mm                          | 1    |
| SP-1358-33 | Marker, Left  | 3    |
| SP-1358-34 | Marker, Right   | 3    |
| SP-1358-35 | Flexible Screwdriver, Hex 3.0mm, for Occipital System | 1    |
| SP-1358-36 | Screwdriver, Hex 2.0mm, for Occipital System          | 1    |
| SP-1358-39 | Instrument Tray Vertaux-Occipital Instrument Set      | 3    |
| SP-1358-37 | Container for Vertaux-Occipital Instrument Set        | 1    |



### USA

Auxein Inc. 1500 Nw 89th Court, Suite 107-108 Doral, Florida 33172 Tel: +1 305 395 6062 E Fax: +1 305 395 6262 Email: USoffice@auxein.com

#### www.auxein.com

#### MEXICO

Auxein México, S.A. de C.V. Tepic 139 int 801, Colonia Roma Sur, Alcaldía Cuauhtémoc, CDMX, México, C.P. 06760 Tel: +521 55 7261 0318 Email: info@auxein.mx

### INDIA

Auxein Medical Pvt. Ltd. Plot No. 168-169-170, Phase-4, Kundli Industrial Area, HSIIDC, Sector-57, Sonepat - 131028, Haryana Tel: +91 99106 43638 | Fax: +91 86077 70197 Email: info@auxein.com