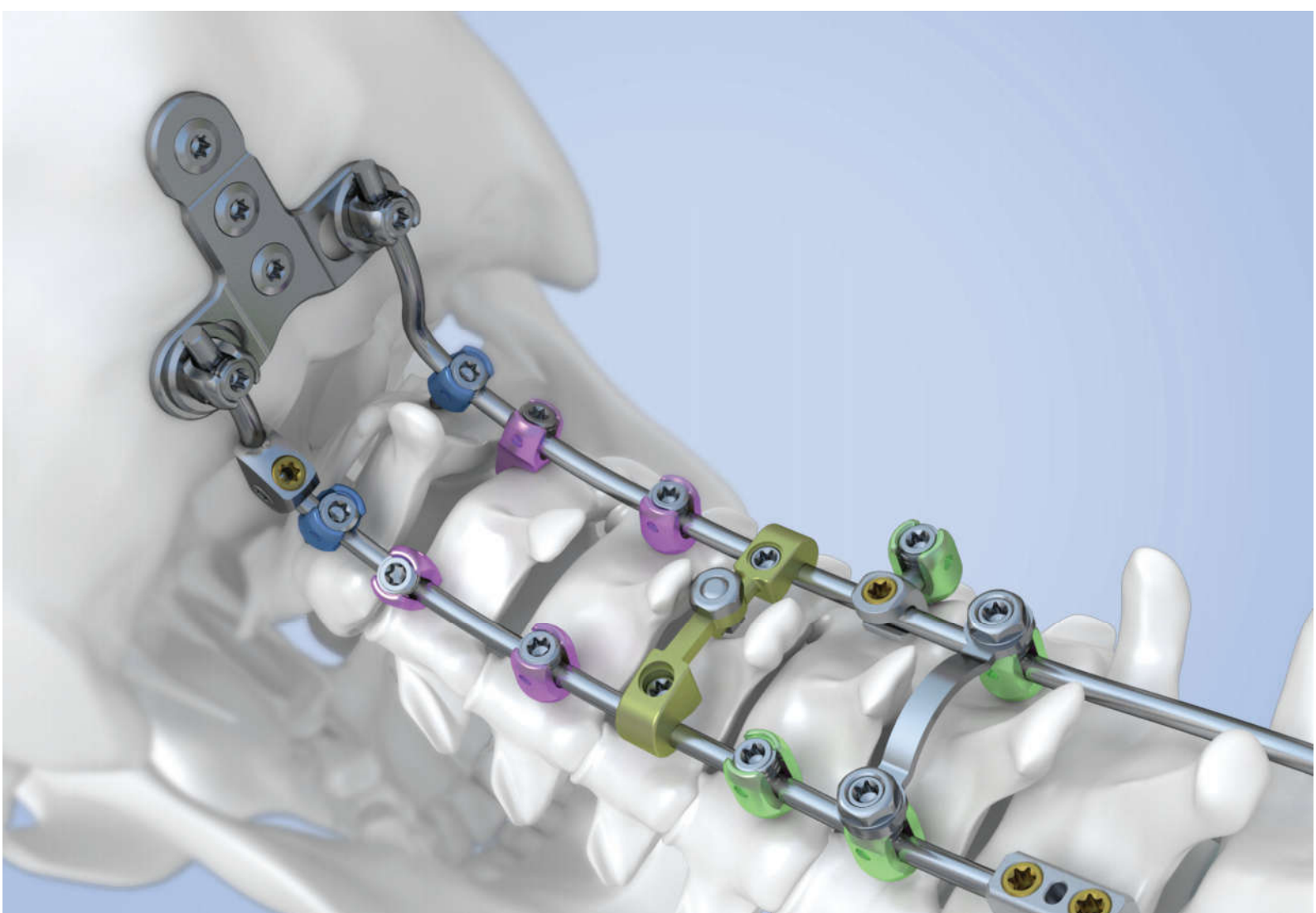


ANAX™ OCT

Spinal System



Product Overview

Occipital plate

- Medial occipital plate (Small, Medium, Large)
- Lateral occipital plate (Small, Medium, Large)
- Cortical screw (D4.5mm),
Rescue screw (D5.0mm)

Rod

- Rod (D3.5)
- Transition rod (D3.5-D5.5, D3.5-D6.0)
- Pre-bent rod (D3.5)
- OC Adjustable Rod (D3.5)

Set screw

- Set screw (Square thread)
- Set screw for H-H connector
- Set screw for connector

Transverse link

- Small, Medium, Large
- Head to head connector

Hook

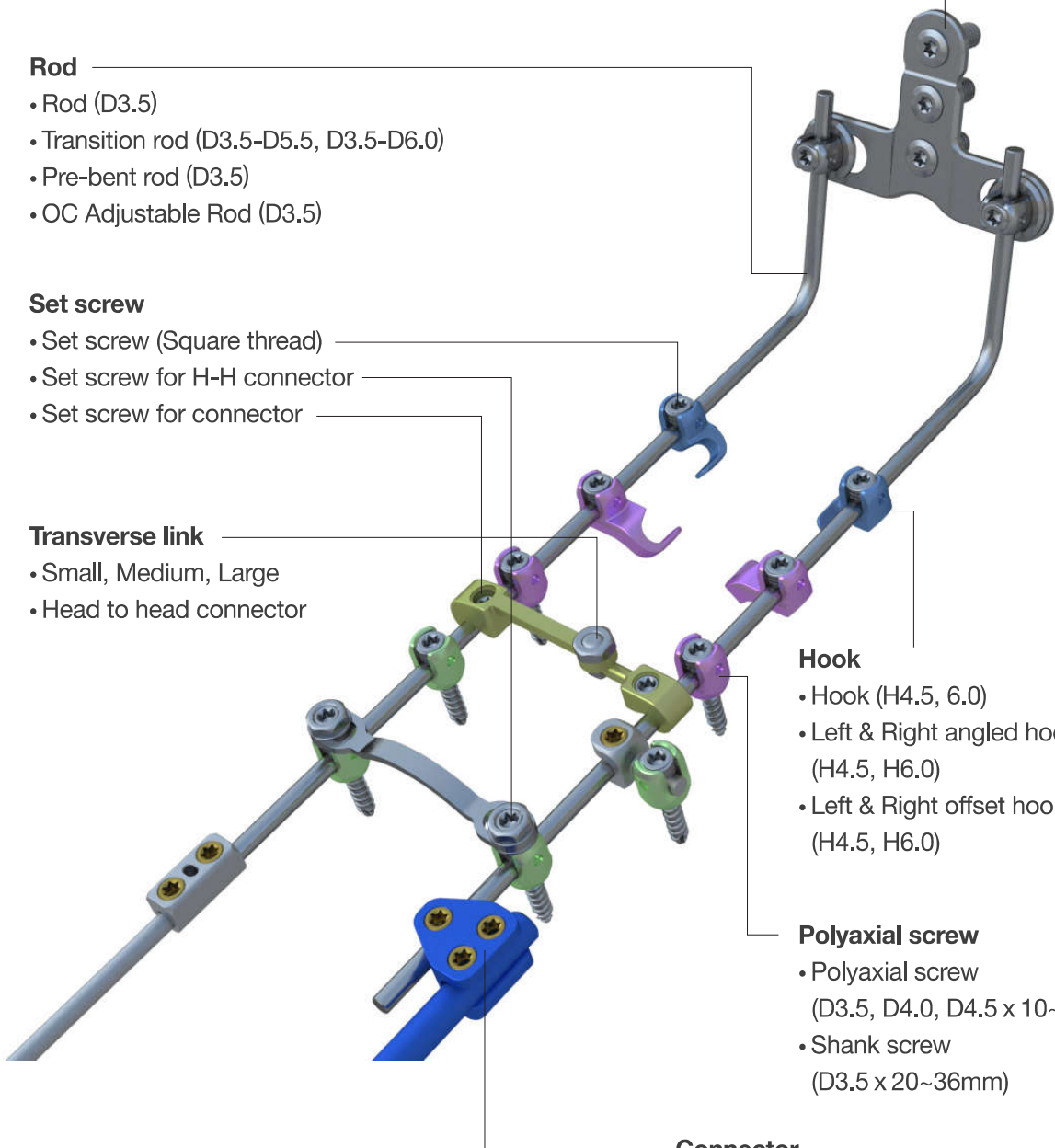
- Hook (H4.5, 6.0)
- Left & Right angled hook (H4.5, H6.0)
- Left & Right offset hook (H4.5, H6.0)

Polyaxial screw

- Polyaxial screw (D3.5, D4.0, D4.5 x 10~50mm)
- Shank screw (D3.5 x 20~36mm)

Connector

- Axial connector (D3.5-D3.5, D3.5-D5.5, D3.5-D6.0)
- Domino connector (D3.5-D3.5, D3.5-D5.5, D3.5-D6.0)
- Lateral connector (L10, L13mm)



Preparation

All necessary imaging studies should be available to plan implant placement and visualize individual patient anatomy.

The patient is placed on the operating table in a prone position with the patient's head securely immobilized. Care should be taken to avoid abdominal pressure in order to reduce bleeding.

Use the standard surgical approach to expose the spinous processes and lamina of the vertebrae to be fused.

Surgical Technique

1. Start screw hole

Instruments	
OS0350	AWL

Determine the entry point and trajectory for the screw and use the **AWL** to create a pilot hole (Fig. 1). This helps to prevent displacement of the **DRILL BIT** during initial insertion.



Fig. 1

2. Select screw and drill bit

Instruments	
OS0010	DRILL BIT FOR D3.5 (Ø2.1)
OS0020	DRILL BIT FOR D4.0 (Ø2.6)
OS0030	DRIVING HANDLE
OS0040	ADJUSTABLE DRILL GUIDE

Select the **DRILL BIT** that corresponds to the screw diameter to be used. **DRILL BIT** has color anodized ring according to the desired screw size. 3.5 mm screw is to be used with Ø2.1 drill bit identified by dark blue color anodizing ring. 4.0 mm screw has a larger core diameter and is to be used with Ø2.6 drill bit identified by violet color anodizing ring. (Fig. 2)



Drill bit for
D3.5(Ø2.1)



Drill bit for
D4.0(Ø2.6)

Fig. 2

3. Set ADJUSTABLE DRILL GUIDE depth

Instruments	
OS0040	ADJUSTABLE DRILL GUIDE

To set the **ADJUSTABLE DRILL GUIDE** to the desired depth, push the side button to release the inner tube, align the distal end of the internal drill guide tube with the appropriate depth calibration on the window. Release the button to lock the **ADJUSTABLE DRILL GUIDE** at the desired depth. (Fig. 3)

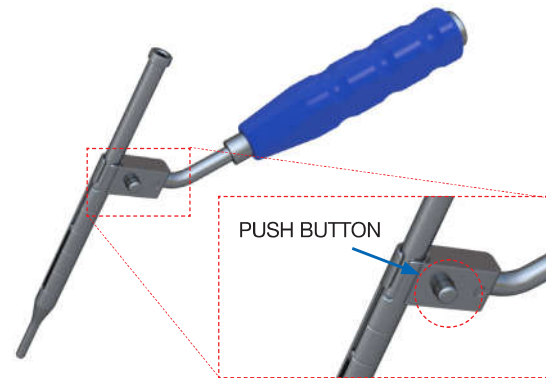


Fig. 3

4. Drill hole

Instruments	
OS0010	DRILL BIT FOR D3.5 (Ø2.1)
OS0020	DRILL BIT FOR D4.0 (Ø2.6)
OS0030	DRIVING HANDLE
OS0040	ADJUSTABLE DRILL GUIDE
OS0330	STRAIGHT PROBE
OS0340	CURVED PROBE
OS0360	STRAIGHT & CURVED TESTER

Drill to the desired trajectory and depth using the **DRILL BIT** (either Ø2.1, Ø2.6) with the **DRIVING HANDLE**; they are going through the **ADJUSTABLE DRILL GUIDE**.(Fig. 4)

The **DRIVING HANDLE** attached to the **DRILL BIT** is not shown. Pedicle preparation can be performed using the **PROBES**(straight or curved) or **TESTER**.



Fig. 4

5. Measure

Instruments	
SO0280	DEPTH GAUGE (50mm)

Use the **DEPTH GAUGE** to confirm the hole depth and select the corresponding screw length. The **DEPTH GAUGE** reading and the screw length indicate actual bone purchase. The **DEPTH GAUGE** must sit directly on the bone. (Fig. 5)

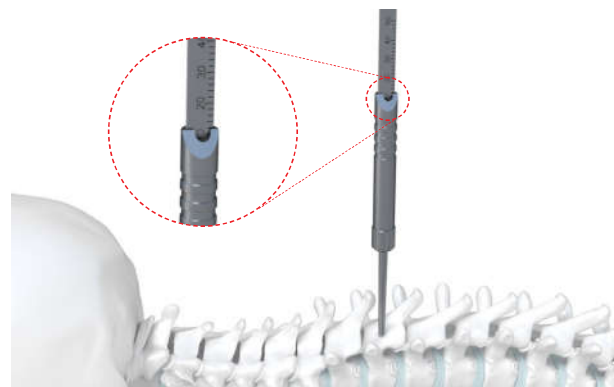


Fig. 5

6. Tapping (optional)

Instruments	
OS0030	DRIVING HANDLE
OS0050	ADJUSTABLE TAP GUIDE
OS0060	TAP D3.5 (Dark Blue)
OS0070	TAP D4.0 (Violet)
OS0080	TAP D4.5 (Green)

Dense bone may be tapped using the appropriate **TAPs**, depending on the chosen screw. **TAP** is identified by color anodizing ring according to the housing color of desired screws. (Fig. 6)

Setting method of **ADJUSTABLE TAP GUIDE** is same with **ADJUSTABLE DRILL GUIDE** for desired tap depth. (Fig. 7)

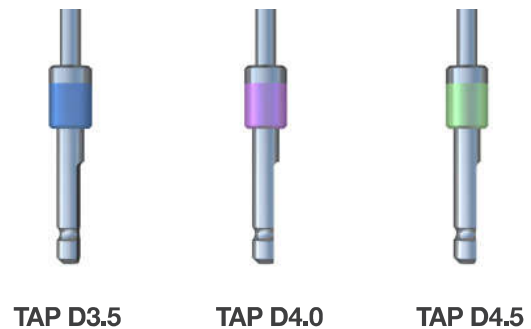


Fig. 6



Fig. 7

7. Insert screw

Instruments	
OS0090	POLY SCREW DRIVER SHAFT
OS0091	HOLDING SLEEVE
OS0092	DRIVER ADAPTOR
OS0093	ROTARY SLEEVE
OS0100	RATCHET HANDLE

Selected polyscrew should be assembled with **POLY SCREW DRIVER ASSEMBLY**(OS0090, OS0091, OS0092, and OS0093) before screw insertion. Insert the selected screws using the **POLY SCREW DRIVER ASSEMBLY**. (Fig. 8)

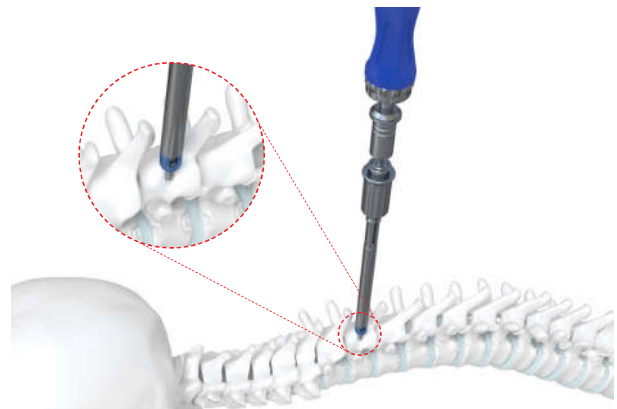


Fig. 8

Note

ROTARY SLEEVE should be used to grip the **HOLDING SLEEVE** during screw insertion.

8. Insert of rod

Instruments	
SO0160	ALIGNMENT TOOL
OS0120	ROD CUTTER
OS0130	ROD BENDER
OS0140	ROD HOLDER
OS0220	IN-SITU ROD BENDER (LEFT)
OS0230	IN-SITU ROD BENDER (RIGHT)
OS0240	ROD TEMPLATE

Contour the **ROD TEMPLATE** to estimate appropriate rod length and proper shape for anatomy. Use the **ROD BENDER** to contour the rod to fit contoured the **ROD TEMPLATE**. (Fig. 9) For more complex anatomy, rod bending can be optionally performed using the **IN-SITU ROD BENDERS** by holding the both ends of the rod. Use the **ROD CUTTER** to cut the rod to the appropriate length.

Insert the rod into the variable axis heads of the screws using the **ROD HOLDER**. (Fig. 10)

The **ALIGNMENT TOOL** may be used to help orient the heads to the correct position.



Fig. 9



Fig. 10

9. Insert of set screw

Instruments	
OS0150	T15 DRIVER SHAFT
OS0210	TORQUE LIMITTING HANDLE

Loosely fasten the set screw using the **T15 DRIVER SHAFT** and **TORQUE LIMITTING HANDLE**. When inserting the set screws, they may be turned one-quarter to one-half turn counterclockwise to seat the thread before tightening. (Fig. 11)



Fig. 11

9-1. Persuader (Optional)

Instruments	
OS0200	PERSUADER

Use the **PERSUADER** to introduce the titanium rod into the polyaxial screw housing U shape channel. Place the **PERSUADER** over the rod and onto the poly axial screw housing until the tip of the **PERSUADER** sits below the screw head reduction feature. Squeeze the handle to engage the **PERSUADER** and introduce the rod into the head of the screw. Loosely fasten the set screws using the **SET SCREW INSERTER** through the cannulation of the **PERSUADER**. When insert the set screw, they may be turned one-quarter to one-half turn counterclockwise to seat the thread before tightening. (Fig. 12)

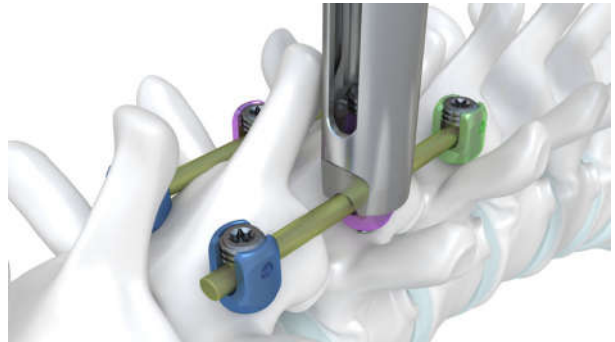


Fig. 12

10. Lock construct

Instruments	
OS0150	T15 DRIVER SHAFT
OS0190	ANTI-TORQUE
OS0210	TORQUE LIMITTING HANDLE

After final adjustment of the construct, fully tighten all set screws with the **T15 DRIVER SHAFT** and **TORQUE LIMITTING HANDLE**. The construct is now rigidly locked. Final tightening should be accomplished with a torque of 3.0 Nm after all set screws have been placed, and should be aided by the **ANTI-TORQUE**. (Fig. 13)

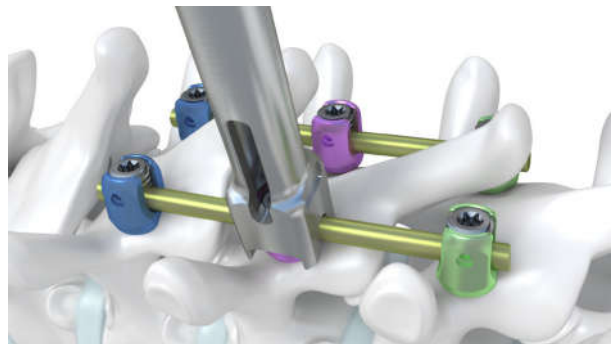


Fig. 13

11. Apply compression or distraction

Instruments	
OS0170	DISTRACTOR
OS0180	COMPRESSOR

COMPRESSOR or **DISTRACTOR** with polyaxial screw heads is only possible if the set screw have not been tightened. Use the **COMPRESSOR** to achieve compression or the **DISTRACTOR** to achieve distraction, and then tighten the set screws as described in Step 10. (Fig. 14)

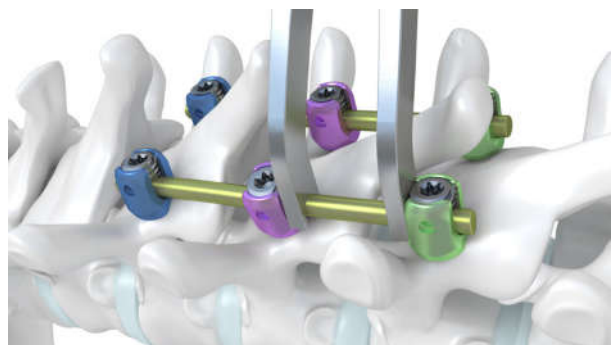


Fig. 14

Additional Techniques

A. Placement of laminar Hooks

a. Place laminar hooks

Instruments	
OS0110	HOOK HOLDER

Attach the **HOOK HOLDER** to the appropriate hook. Place the hook in the desired location. (Fig. 15)

b. Insert rod

Insert the rod as described in step 8.

c. Insert of set screw

Instruments	
OS0110	HOOK HOLDER
OS0150	T15 DRIVER SHAFT
OS0210	TORQUE LIMITTING HANDLE

Loosely fasten the set screw using the **T15 DRIVER SHAFT**, with the **HOOK HOLDER** holding the hook to stabilize the construct.

d. Lock construct

Lock the construct as described in step 10



Fig. 15

B. Insert transverse link

Instruments	
OS0140	ROD HOLDER
OS0150	T15 DRIVER SHAFT
OS0160	DRIVER FOR TL
OS0210	TORQUE LIMITTING HANDLE

Place the transverse link on the screw construct to assess fit. Hold the transverse link with the **ROD HOLDER**. Adjust as necessary.

Both sides of the transverse link should be placed over the rods. Perform semi-tightening using **T15 DRIVER SHAFT** for both side set screw and use **DRIVER FOR TL** for center nuttightening.

After removing the **ROD HOLDER**, fully tighten for set screws and center nut using the **T15 DRIVER SHAFT** and **DRIVER FOR TL** with a torque of 3.0 Nm respectively. (Fig. 16)

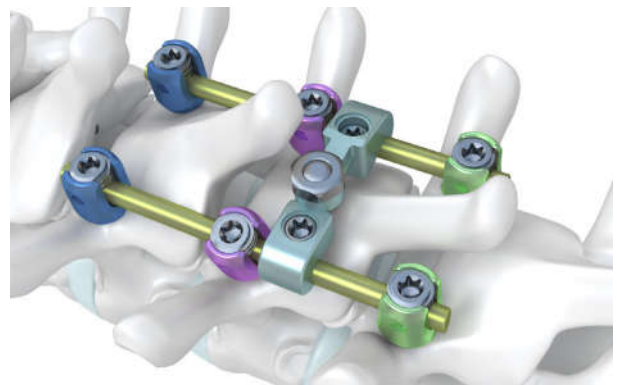


Fig. 16

Optionally, H-H Connector can be used to connect housing to housing in transverse direction. Firstly, attach the Set screw for H-H connector having bi-level thread to the housing of the embedded screw. Place the H-H Connector, then perform final tightening with the Nut using **DRIVER FOR TL** for H-H Connector with 3.0 Nm torque. (Fig. 17)

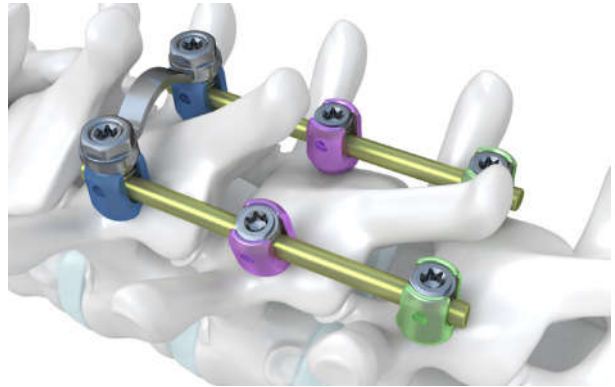


Fig. 17

C. Insert lateral connector

Instruments	
OS0140	ROD HOLDER
OS0150	T15 DRIVER SHAFT
OS0210	TORQUE LIMITTING HANDLE

In need of offset connection between the screw and rod, the lateral connectors are used. In case of offset distance between the screw and rod more than 8 mm, then the connectors should be used. (Fig. 18)

Insert the connector to the screw already embedded into the bone. Insert the set screw for connector to the screw using the **T15 DRIVER SHAFT** and **TORQUE LIMITTING HANDLE**; they may be turned one-quarter to one-half turn counterclockwise to seat the thread before tightening.

Insert the rod into the connector and insert the set screw using the **T15 DRIVER SHAFT** and **TORQUE LIMITTING HANDLE**.

After final adjustment of the construct, perform final tightening to the screw and the connector using the **TORQUE LIMITTING HANDLE** with a torque of 3.0 Nm.

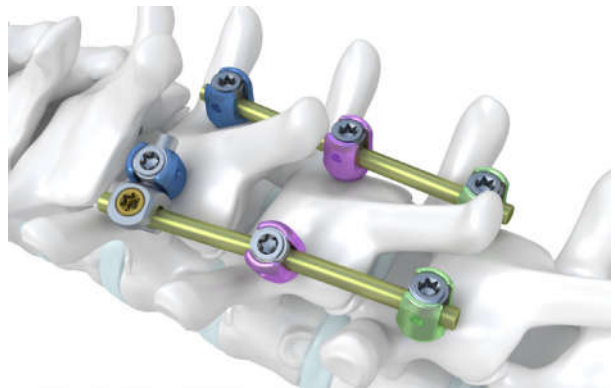


Fig. 18

D. Insert axial/domino connector

In need of extending an ANAX™ OCT Spinal System construct, the axial or domino connectors are provided. (Fig. 19)

With axial or domino connectors, either side of the connector may be connected first. Tighten the set screw on one side, then connect the remaining rod and tighten the set screw using the **TORQUE LIMITTING HANDLE** with a torque of 3.0 Nm.



Fig. 19

E. Occipital fusion technique

a. Select occipital plate

Instruments	
OS0250	OCCIPITAL PLATE HOLDER

Select the appropriate plate size to best fit the occiput. (Fig. 20)



Fig. 20

b. Contour plate

Instruments	
OS0220	IN-SITU BENDER(LEFT)
OS0230	IN-SITU BENDER(RIGHT)

Use the IN-SITU BENDERS to contour the plate to fit the anatomy. (Fig. 21)



Fig. 21

c. Drilling

Instruments	
OS0030	DRIVING HANDLE
OS0260	D3.3 DRILL BIT
	FOR CORTICAL SCREW
OS0270	D3.8 DRILL BIT
	FOR RESCUE SCREW
OS0300	DT GUIDE FOR PLATE (6-8)
OS0310	DT GUIDE FOR PLATE (10-12)
OS0320	DT GUIDE FOR PLATE (14-16)

After positioning the plate on the occiput, select **DT GUIDE FOR PLATE** size for the desired depth. Drill a hole to the desired trajectory and depth, using the **D3.3 DRILL BIT FOR CORTICAL SCREW** through the **DT GUIDE FOR PLATE**. Drilling must occur through the occipital plate to ensure proper drilling depth. (Fig. 22)

Note

D3.8 DRILL BIT FOR RESCUE SCREW is used for preparation of **RESCUE SCREW**.

d. Tapping

Instruments	
OS0280	TAP FOR CORTICAL SCREW
OS0290	TAP FOR RESCUE SCREW

Tap through selected **DT GUIDE FOR PLATE** and **OCCIPITAL PLATE**, to ensure proper tapping depth. (Fig. 23)

Note

TAP FOR RESCUE SCREW is used for preparation of **RESCUE SCREW**.

e. Insert screw

Instruments	
OS0030	DRIVING HANDLE
OS0150	T15 DRIVER SHAFT

Insert the selected size of **CORTICAL SCREW** and provisionally tighten. (Fig. 24)

Note

RESCUE SCREW may be used if the **CORTICAL SCREW** has less than optimal fixation.

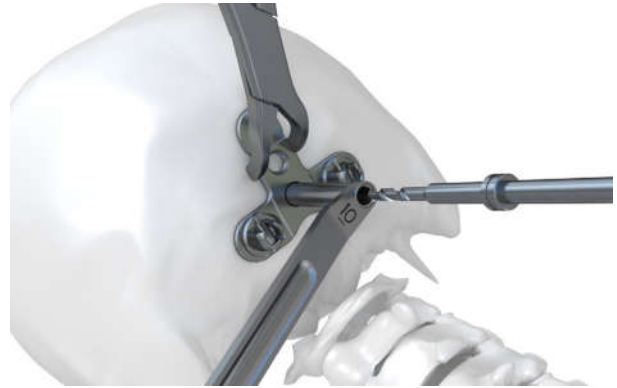


Fig. 22



Fig. 23

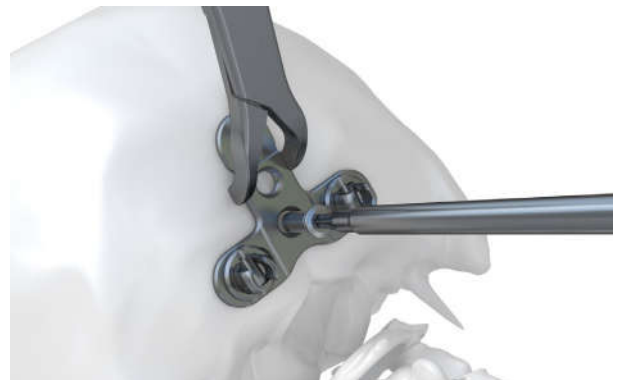


Fig. 24

f. Insert additional screws

Insert remaining screws, as Step E-e. (Fig. 25)



Fig. 25

g. Occipital rod preparation and insertion

Choose suitable rod to fit occipitocervical construct and anatomy. There are two types of rods (PRE-BENT ROD D3.5, OC ADJUSTABLE ROD D3.5) for occipitocervical construct.

If desired, the **ROD TEMPLATE** may be used to determine the appropriate length and curvature of the rod. Cut the rod to the appropriate length using **ROD CUTTER** and contour the rod to the appropriate shape using **ROD BENDER** as described in Step 8. **OC ADJUSTABLE ROD** allows the surgeon to preset the optimal angle of the rod for different patients, and minimize the need for bending. (Fig. 26)

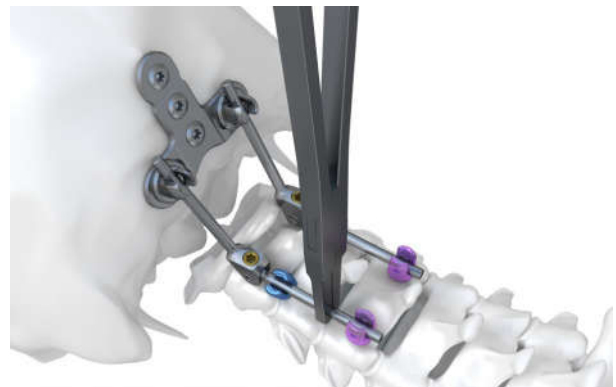


Fig. 26

h. Insert of set screw

Insert the set screw as described in step 9.

i. Lock construct

Lock the construct as described in step 10. (Fig. 27)

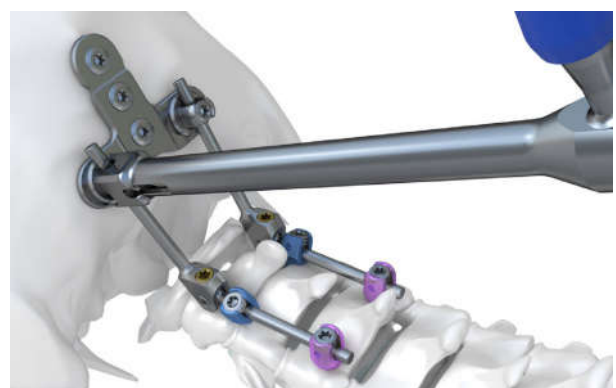


Fig. 27

Implant removal

Instruments	
OS0090	POLY SCREW DRIVER SHAFT
OS0091	HOLDING SLEEVE
OS0092	DRIVER ADAPTOR
OS0140	ROD HOLDER
OS0150	T15 DRIVER SHAFT
OS0160	DRIVER FOR TL

The ANAX OCT system implants can be removed with T15 DRIVER SHAFT. The hook, lateral connector, and axial/domino connectors require that the T15 DRIVER be used for removal.

For the transverse links, the DRIVER FOR TL is required. The embedded screws require that the POLY SCREW DRIVER ASSEMBLY (OS0090, OS0091, OS0092, and OS0093) be used for removal.

Ordering information

Implants (Single Use Only)

Polyaxial Screw Ø3.5mm			
Cat. No	Length (mm)	Cat. No	Length (mm)
OSA3510	10	OSA3532	32
OSA3512	12	OSA3534	34
OSA3514	14	OSA3536	36
OSA3516	16	OSA3538	38
OSA3518	18	OSA3540	40
OSA3520	20	OSA3542	42
OSA3522	22	OSA3544	44
OSA3524	24	OSA3546	46
OSA3526	26	OSA3548	48
OSA3528	28	OSA3550	50
OSA3530	30		

Polyaxial Screw Ø4.0mm			
Cat. No	Length (mm)	Cat. No	Length (mm)
OSA4010	10	OSA4030	30
OSA4012	12	OSA4032	32
OSA4014	14	OSA4034	34
OSA4016	16	OSA4038	38
OSA4018	18	OSA4040	40
OSA4020	20	OSA4042	42
OSA4022	22	OSA4046	46
OSA4024	24	OSA4048	48
OSA4026	26	OSA4050	50
OSA4028	28		








Polyaxial Screw Ø4.5mm			
Cat. No	Length (mm)	Cat. No	Length (mm)
OSA4520	20	OSA4536	36
OSA4522	22	OSA4538	38
OSA4524	24	OSA4540	40
OSA4526	26	OSA4542	42
OSA4528	28	OSA4544	44
OSA4530	30	OSA4546	46
OSA4532	32	OSA4548	48
OSA4534	34	OSA4550	50



Polyaxial Shank Screw Ø3.5mm			
Cat. No	Length (mm)	Cat. No	Length (mm)
OSA3620	20	OSA3630	30
OSA3622	22	OSA3632	32
OSA3624	24	OSA3634	34
OSA3626	26	OSA3636	36
OSA3628	28		



Set Screws			
			
Cat. No	OS1030	OS2500	OSA2801
Description	Set Screw for Screws (Square Thread)	Set Screw for Connector	Set Screw for H-H Connector

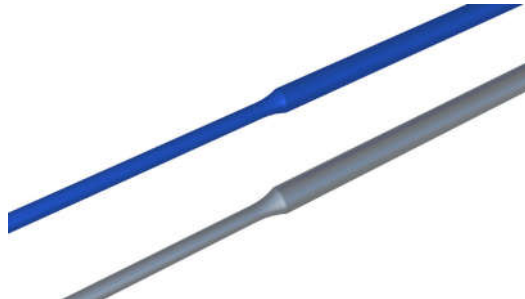
Lamina Hook			
4.5mm		6.0mm	
			
Cat. No	Description	Cat. No	Description
OS1545	STRAIGHT	OS1560	STRAIGHT
OS1546	LEFT ANGLED	OS1561	LEFT ANGLED
OS1547	RIGHT ANGLED	OS1562	RIGHT ANGLED
OS1548	LEFT OFFSET	OS1563	LEFT OFFSET
OS1549	RIGHT OFFSET	OS1564	RIGHT OFFSET

Rod




Cat. No	Length (mm)
OS2001	30
OS2002	35
OS2003	40
OS2004	45
OS2005	50
OS2006	55
OS2007	60
OS2008	70
OS2009	80
OS2010	90
OS2011	100
OS2012	120
OS2013	150
OS2014	200
OS2015	240


Transition Rod



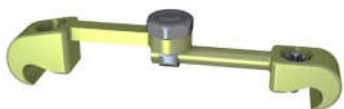
Cat. No	Length (mm)
OS2111	Ø3.5 - Ø5.5 x 200
OS2112	Ø3.5 - Ø5.5 x 300
OS2113	Ø3.5 - Ø5.5 x 400
OS2121	Ø3.5 - Ø6.0 x 200
OS2122	Ø3.5 - Ø6.0 x 300
OS2123	Ø3.5 - Ø6.0 x 400

Rod for Occipital Plate

Cat. No	Image
OS2210	
Description	
Pre-Bent	

Cat. No	Image
OSA2320	
Description	
OC Adjustable	

Transverse Link



Cat. No	Width (mm)
OSA2410	Small (23~28)
OSA2420	Medium (28~37)
OSA2430	Large (37~55)

Lateral Connector




Cat. No	Length (mm)
OS2510	10
OS2513	13

Axial Connector

			
Cat. No	OS1030	OS2500	OSA2801
Size	Ø3.5 - Ø3.5	Ø3.5 - Ø5.5	Ø3.5 - Ø6.0

Domino Connector

			
Cat. No	OS1030	OS2500	OSA2801
Size	Ø3.5 - Ø3.5	Ø3.5 - Ø5.5	Ø3.5 - Ø6.0

H-H Connector



Cat. No	Description
OS2803	Nut



Cat. No	Width (mm)
OS2810	22-28
OS2820	28-34
OS2830	34-40
OS2840	40-46
OS2850	46-52

Occipital Plate



Medial

Cat. No	Width (mm)
OSA5010	Small (20~30)
OSA5020	Medium (30~40)
OSA5030	Large (40~50)

Lateral

Cat. No	Width (mm)
OSA5110	Small (20~30)
OSA5120	Medium (30~40)
OSA5130	Large (40~50)

Cortical Screw for Plate



Ø4.5

Cat. No	Length (mm)
OS5206	6
OS5208	8
OS5210	10
OS5212	12
OS5214	14

Ø5.0

Cat. No	Length (mm)
OS5306	6
OS5308	8
OS5310	10
OS5312	12
OS5314	14

Instruments

| OS0010 DRILL BIT FOR D3.5



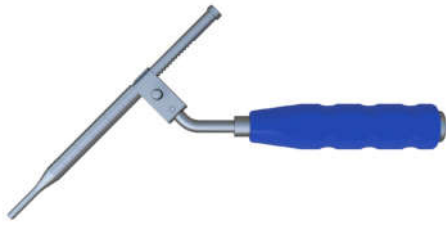
| OS0020 DRILL BIT FOR D4.0



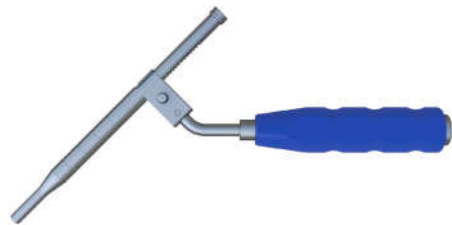
| OS0030 DRIVING HANDLE



| OS0040 ADJUSTABLE DRILL GUIDE



| OS0050 ADJUSTABLE TAP GUIDE



| OS0060 TAP FOR D3.5



| OS0070 TAP FOR D4.0



| OS0080 TAP FOR D3.5



| OS0090 POLY SCREW DRIVER SHAFT



| OS0091 HOLDING SLEEVE



| OS0092 DRIVER ADAPTOR



| OS0093 ROTARY SLEEVE

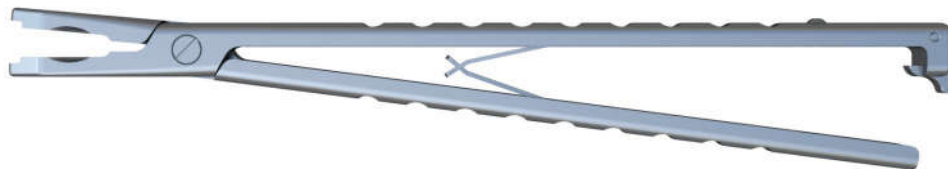


| OS0100 RATCHET HANDLE



Instruments

| OS0110 HOOK HOLDER



| OS0120 ROD CUTTER



| OS0130 ROD CUTTER



| OS0140 ROD HOLDER



| OS0150 T15 DRIVER SHAFT



| OS0160 DRIVER FOR TL



Instruments

| OS0170 DISTRACTOR



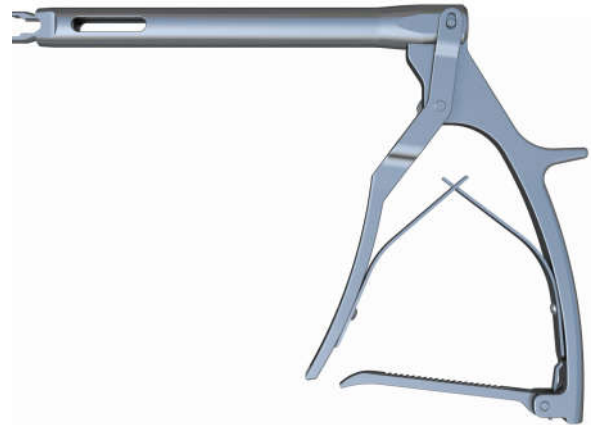
| OS0180 COMPRESSOR



| OS0190 ANTI-TORQUE



| OS0200 PERSUADER



| OS0210 TORQUE LIMITTING HANDLE



| OS0220 IN-SITU BENDER (LEFT)



| OS0230 IN-SITU BENDER (RIGHT)



| OS0240 ROD TEMPLATE



| OS0250 OCCIPITAL PLATE HOLDER



Instruments

OS0260 D3.3 DRILL BIT FOR CORTICAL SCREW



OS0270 D3.8 DRILL BIT FOR RESCUE SCREW



OS0280 TAP FOR CORTICAL SCREW



OS0290 TAP FOR RESCUE SCREW



OS0300 DT GUIDE FOR PLATE (6-8)



OS0310 DT GUIDE FOR PLATE (10-12)



OS0320 DT GUIDE FOR PLATE (14-16)



OS0330 STRAIGHT PROBE



OS0340 CURVED PROBE



OS0350 AWL



OS0360 STRAIGHT & CURVED TESTER



SO0160 ALIGNMENT TOOL

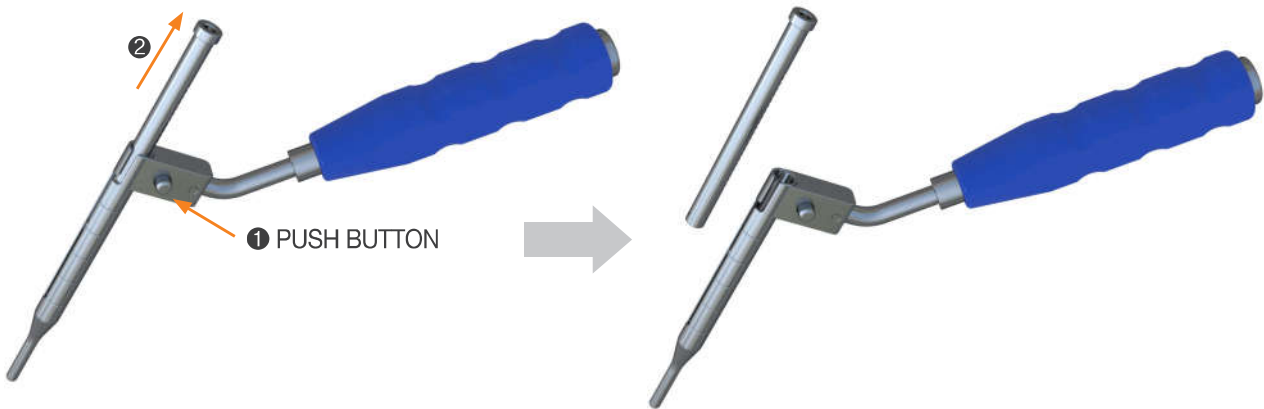


SO0280 DEPTH GAUGE (50mm)

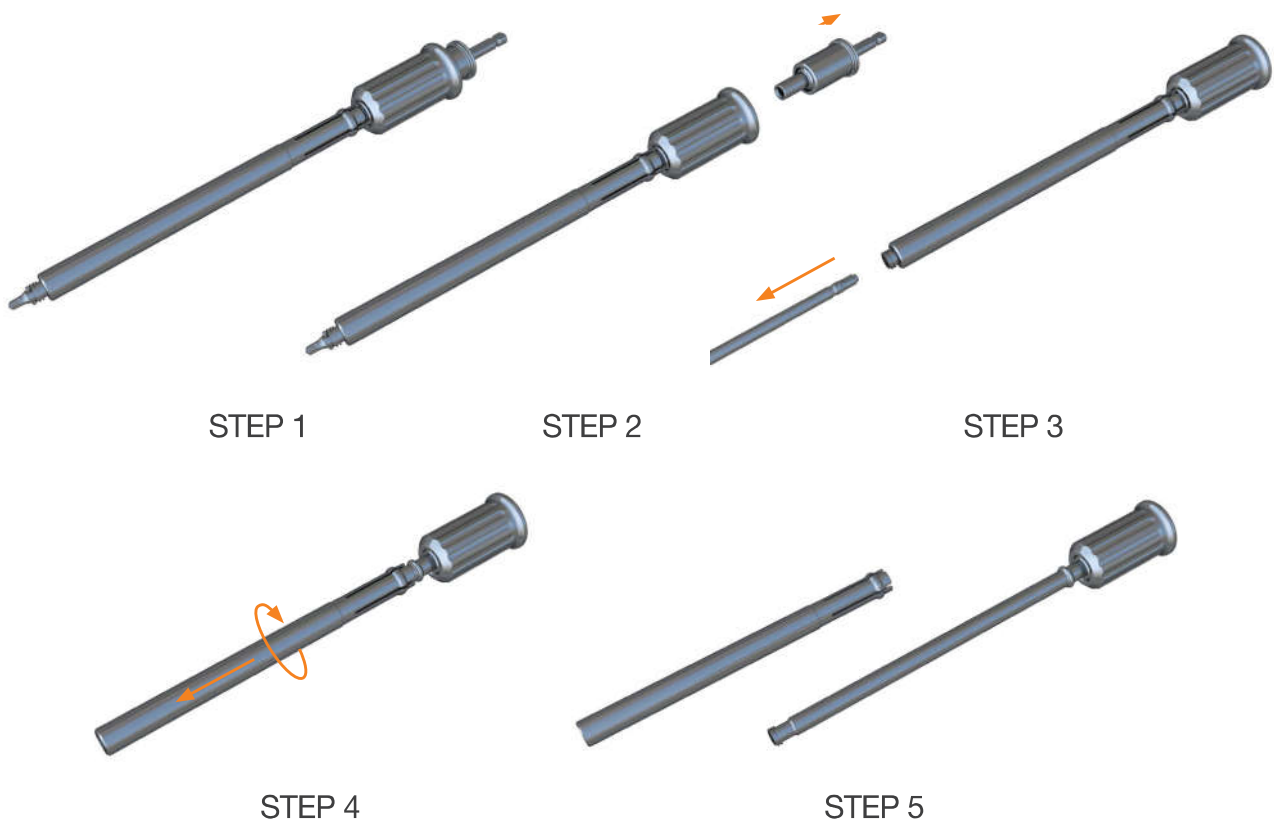


How to disassemble instrument for cleaning

OS0040 ADJUSTABLE DRILL GUIDE
OS0050 ADJUSTABLE TAP GUIDE

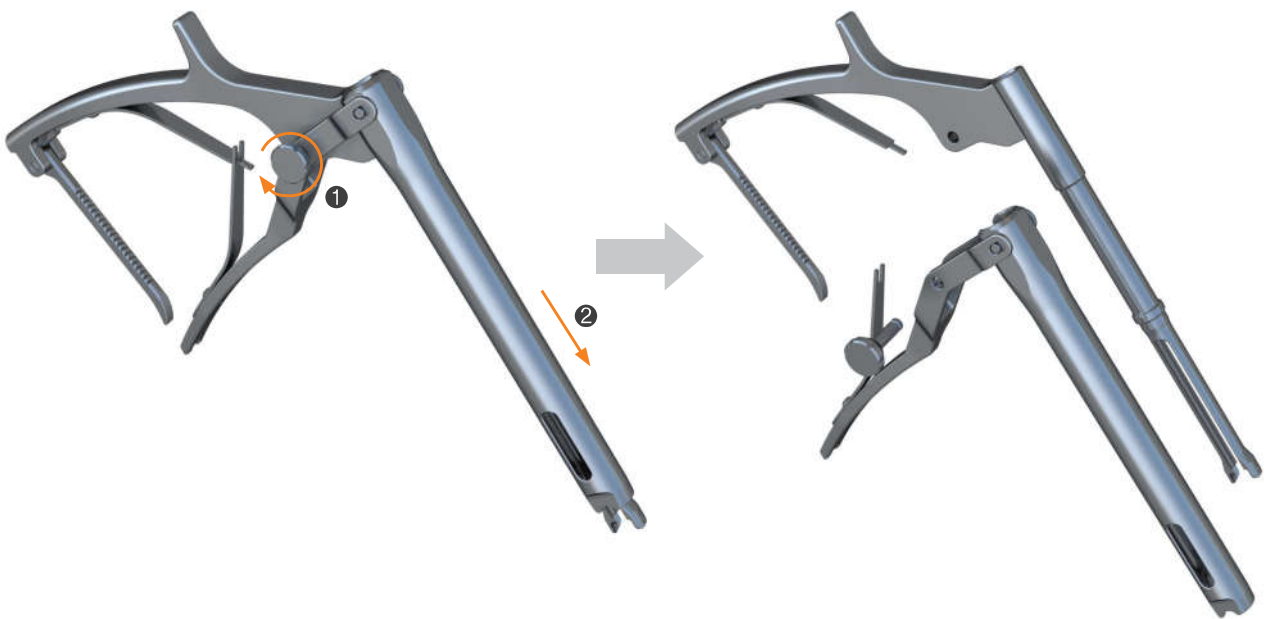


POLY SCREW DRIVER DISASSEMBLY (OS0090, OS0091, OS0092 and OS0093).

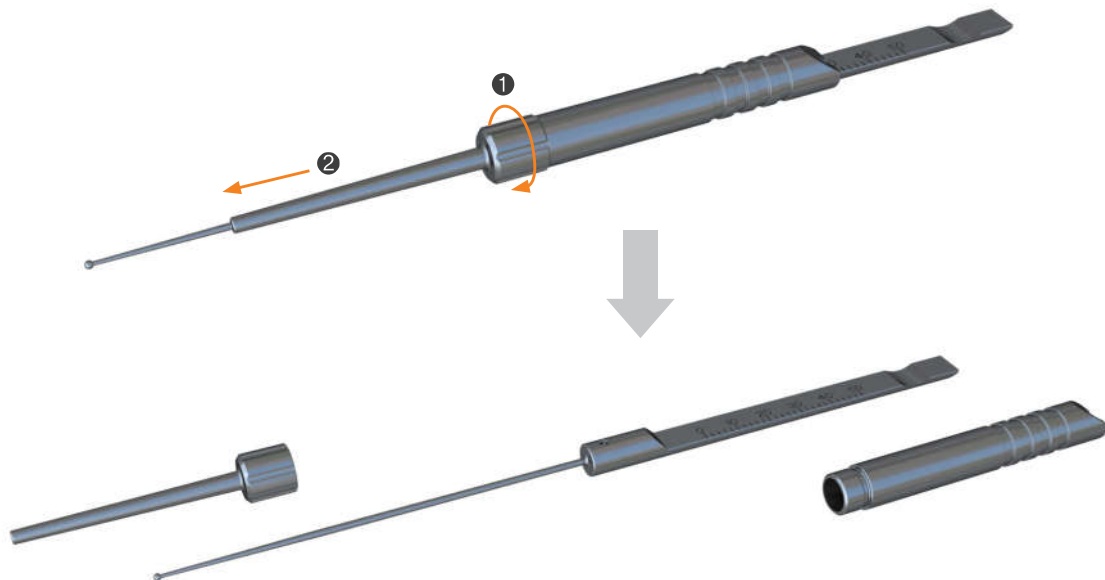


Instruments

OS0200 PERSUADER



OS0200 PERSUADER



※ ASSEMBLY OF INSTRUMENTS

After cleaning and dry, all instruments should assemble in reverse order of disassembly to place their former positions for storage and sterilization



Headquarter

20, Sandan-ro, 76beon-gil(Rd), Uijeongbu-si,
Gyeonggi-do, Korea 480-859
Tel. +82 (31) 860 6800
Fax. +82 (31) 852 9025

Seoul R&BD Center

11F, 299, Olympic-ro, Songpa-gu,
Seoul, Korea 05510
Tel +82 (02) 2046 6700
Fax. +82 (02) 420 4955

USA Office

24835 La Palma Ave. Suite G Yorba Linda,
CA 92887
Tel. +1 (714) 280 4955
Fax. +1 (714) 209 7571