

Angular Stable Locking System (ASLS). For angular stable locking of intra-medullary nails.

Technique Guide

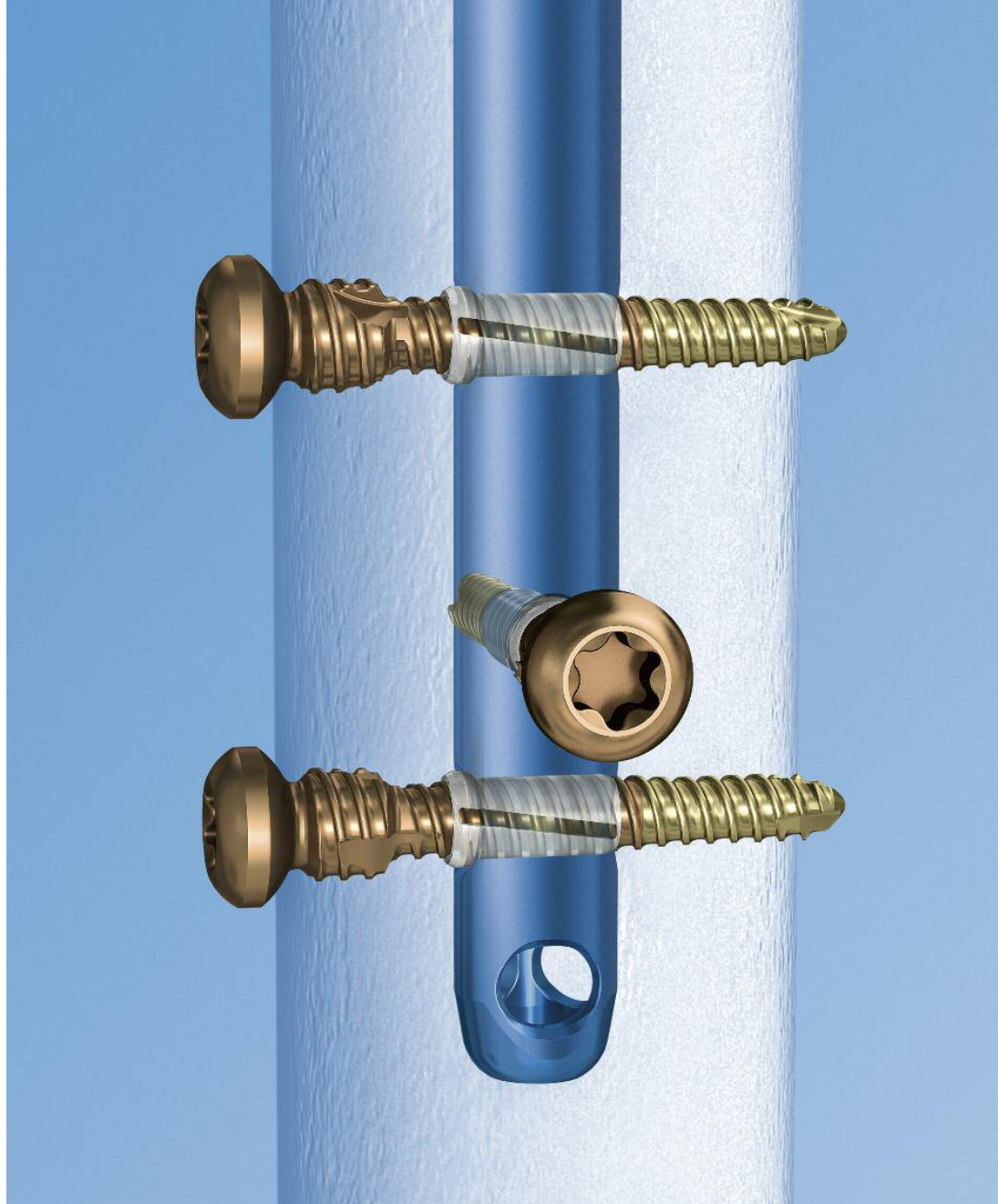


 Image intensifier control

Warning

This description alone does not provide sufficient background for direct use of the product. Instruction by a surgeon experienced in handling this product is highly recommended.

**Reprocessing, Care and Maintenance of
Synthes Instruments**

For general guidelines, function control and dismantling of multi-part instruments, please refer to: www.synthes.com/reprocessing

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Angular Stable Locking System (ASLS).

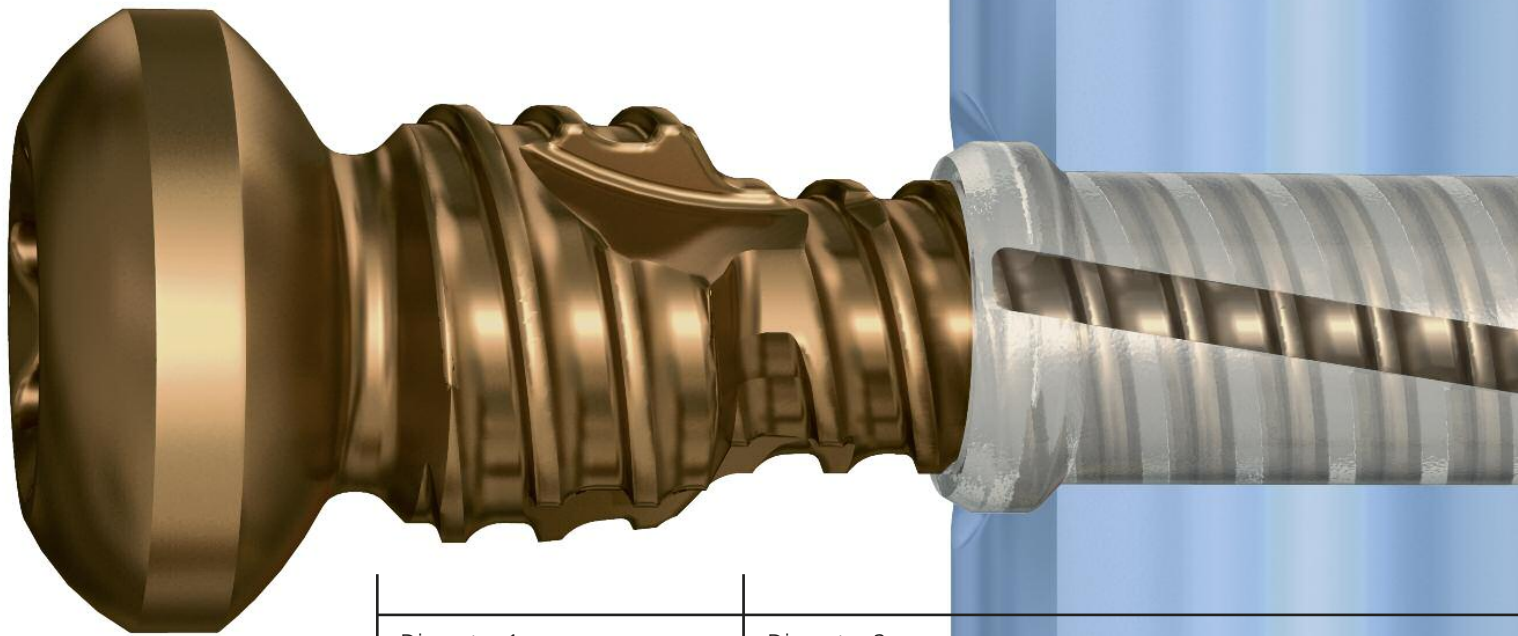
For angular stable locking of intra-medullary nails.

Angular and axial stability

- Fracture site motion decreased 80% during first 12 weeks of healing
- Improved fixation in poor bone quality
- Decreased risk of secondary loss of reduction

Compatibility with existing nails

- Compatible with all Synthes cannulated titanium nails
- Free combinations of standard and ASLS screws in same nail
- Intraoperative choice for ASLS



Diameter 1:
Provides purchase
in reamed
near cortex

Diameter 2:
Expands sleeve,
thus providing
angular stability

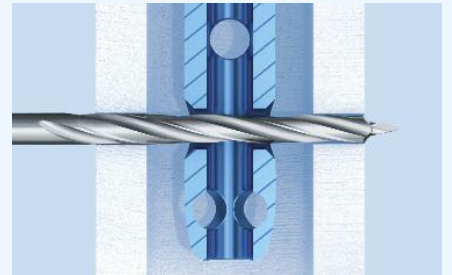


Bioresorbable sleeve 70:30 poly (L-lactide-co-D,L-Lactide)

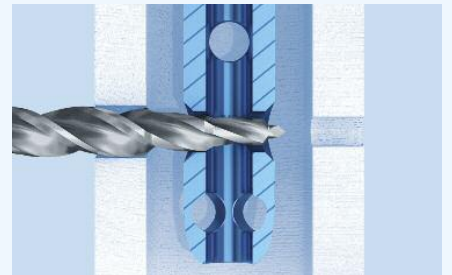


Diameter 3:
Holds unexpanded sleeve
for screw insertion, provides
purchase in far cortex

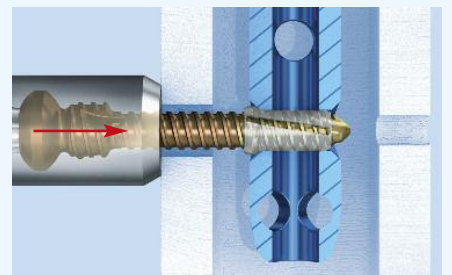
Familiar technique



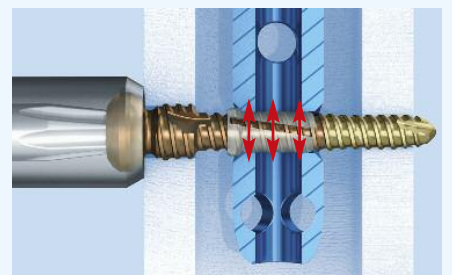
1. Drill both cortices



2. Ream near cortex



3. Insert unexpanded sleeve into nail



4. Expanded sleeve provides angular stability

In 1958, the AO formulated four basic principles, which have become the guidelines for internal fixation.^{1,2} The principles as applied to the Angular Stable Locking System (ASLS) are as follows:

Anatomic reduction

Synthes IM nails are designed to anatomically fit in the medullary canal, allowing indirect reduction. ASLS reduces the chance of secondary loss of reduction by providing axial and angular stability.

Stable fixation

ASLS provides angular stable fixation between nails and screws by using resorbable sleeves as dowels in the nail locking holes.

The principles of relative stability achieved with intramedullary nailing are still valid with ASLS.

Preservation of blood supply

ASLS offers all the advantages of an intramedullary approach.

Early, active mobilization

Stable fixation, provided by ASLS, permits controlled, early, active rehabilitation that is conducive to optimal recovery.

¹ Müller ME, Allgöwer M, Schneider R, Willenegger H (1995) Manual of Internal Fixation. 3rd, expanded and completely revised ed. 1991. Berlin, Heidelberg, New York: Springer

² Rüedi TP, Buckley RE, Moran CG (2007) AO Principles of Fracture Management. 2nd expanded ed. 2002. Stuttgart, New York: Thieme

Indications and Contraindications

Indications

ASLS (Angular Stable Locking System) is intended for use with Synthes cannulated titanium intramedullary nails. It is used as an alternative to standard locking screws/bolts.

ASLS is used for the operative treatment and stabilization of long bone fractures of the upper and lower extremities, according to the specific indications of the respective nail system.

ASLS is particularly indicated in cases where increased stability is needed, for example:

- In fractures closer to the metaphyseal area
- In osteopenic bone

Note: The original indications of all Synthes cannulated titanium IM nails are unchanged.

Contraindications

- Contraindications of the respective Synthes nail system are applicable
- Established patient intolerance or allergy to polylactides
- Situations in which internal fixation is contraindicated for other reasons, e.g. patients with acute, potential or chronic infections, poor bone quality, reduced blood circulation, bone disorders or lack of compliance (e.g. alcoholism)

Preparation

The following pages depict different techniques for locking with ASLS. All images use illustrations of the Expert Tibial Nail as an example.

1

Preoperative Planning

Use the respective AO preoperative planner template to estimate nail diameter and length.

2

Reduce fracture and insert nail

Reduce the fracture and insert the nail. Use a compatible Synthes cannulated titanium intramedullary nailing system according to the respective technique guide.

Note: The ASLS is only compatible with cannulated nails. It is necessary for the sleeve to expand within the cannulation of the intramedullary nail to provide sufficient stability.



3

Choose appropriate locking screws

For each locking hole, pre-select the appropriate locking implant that will optimally stabilize the fracture. If using an ASLS screw, the diameter of the ASLS screw and instruments will match the diameter of the standard screw/bolt for the respective nail.

ASLS is particularly effective when increased stability is desired:

- Fractures towards the metaphysis
- Osteopenic bone

Note: A combination of standard locking screws/bolts and ASLS screws can be used in the same nail.

Caution: Do not exchange a standard locking screw/bolt for an ASLS screw or vice versa as this may reduce screw-to-bone interface stability.



Targeted Locking

1

Mount aiming arm and insert trocar combination

Instruments

03.010.063	Protection Sleeve 12.0/8.0, length 188 mm (for Expert nails)
------------	---

03.025.040	Protection Sleeve 11.0/8.0, length 188 mm (for other nail systems)
------------	---

ASLS4:

03.010.064	Drill Sleeve 8.0/3.2, for No. 03.010.063
------------	--

03.010.069	Trocar Ø 3.2 mm, for No. 03.010.064
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ASLS5:

03.010.065	Drill Sleeve 8.0/4.2, for No. 03.010.063
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03.010.070	Trocar Ø 4.2 mm, for No. 03.010.065
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ASLS6:

03.010.066	Drill Sleeve 8.0/5.0, for No. 03.010.063
------------	--

03.010.071	Trocar Ø 5.0 mm, for No. 03.010.066
------------	-------------------------------------

Once the nail is inserted, mount the appropriate aiming arm to the respective insertion handle.

Select the appropriate protection sleeve.

Insert the appropriate three-part trocar combination (protection sleeve, drill sleeve and trocar) through the desired hole in the aiming arm. Make a skin incision and insert the trocar to the bone. Remove the trocar.

Note: Ensure that the drill sleeve is pressed firmly to the near cortex.



2

Drill through both cortices

Instruments

ASLS4:

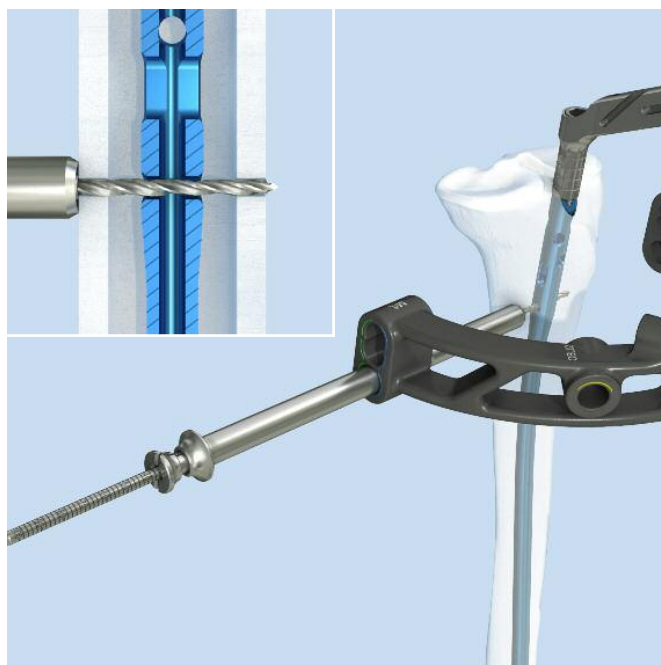
03.025.104 Drill Bit ASLS4, calibrated, length 331 mm, 3-flute, for Quick Coupling, for No. 03.010.064

ASLS5:

03.025.105 Drill Bit ASLS5, calibrated, length 331 mm, 3-flute, for Quick Coupling, for No. 03.010.065

ASLS6:

03.025.106 Drill Bit ASLS6, calibrated, length 331 mm, 3-flute, for Quick Coupling, for No. 03.010.066



Using the appropriate drill bit, drill through both cortices until the tip of the drill bit penetrates the far cortex.

- ⓘ If necessary, use image intensification to control the position of the drill bit.

Caution: Follow all recommended techniques for screw/bolt insertion for the respective nail system. When using mono-cortical locking screws, stop drilling immediately after penetrating the near cortex.

3

Determine locking screw length

Read the measurement from the calibrated drill bit at the back of the drill sleeve. Select the length of the ASLS screw accordingly. Remove the drill bit and drill sleeve.

Caution: Follow all recommended techniques for screw/bolt measurement for the respective nail system.



Alternative technique

Instrument

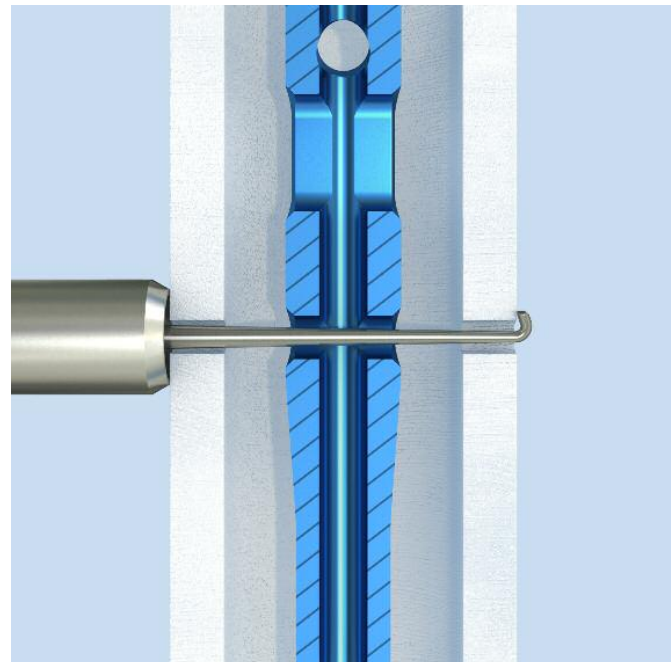
03.025.052 Depth Gauge for ASLS

Remove the drill bit and the drill sleeve. Disassemble the depth gauge, separating the outer sleeve from the measuring device with hook. Insert the measuring device with hook into the protection sleeve.

Read the measurement from the back of the protection sleeve and select the length of the ASLS screw accordingly.



Note: Ensure that the hook grasps the far cortex and that the protection sleeve is pressed firmly to the bone.



4

Ream near cortex

Instruments

ASLS4:

03.025.030 Handreamer ASLS4, length 270 mm,
for near cortex

ASLS5:

03.025.031 Handreamer ASLS5, length 270 mm,
for near cortex

ASLS6:

03.025.032 Handreamer ASLS6, length 270 mm,
for near cortex

Align the handreamer with the locking hole axis. Ream the near cortex and clear the passage down to the nail. Remove the handreamer.

- If necessary, use image intensification to control the position of the handreamer.

Note: To correctly insert the ASLS sleeve, ensure:

- the near cortex is completely reamed.
 - the passage from near cortex to nail locking hole is cleared.
 - the drilled/reamed hole is in line with the nail locking hole.
-



Alternative technique

Instruments

ASLS4:

03.025.134 Reamer ASLS4, length 268 mm, for near cortex, for Quick Coupling

ASLS5:

03.025.135 Reamer ASLS5, length 288 mm, for near cortex, for Quick Coupling

ASLS6:

03.025.136 Reamer ASLS6, length 288 mm, for near cortex, for Quick Coupling

Use a power driven reamer to open the near cortex. Align the reamer with the locking hole axis and ream the near cortex. Once the large diameter of the reamer passes through the near cortex, stop reaming immediately. Remove the reamer.

If necessary, clear the passage down to the nail with the handreamer.

- ⦿ If necessary, use image intensification to control the position of the reamer.

Caution: Ensure that the reamer does not damage the nail.

Continue with chapter “Screw insertion” on page 26.



Freehand Locking

1

Align image

The techniques for distal locking apply. Align the image intensifier with the desired locking hole until a perfect circle is visible in the center of the screen.

- Ⓒ **Note:** Ensure that the image displayed on the image intensifier mirrors the actual image in all axes.



2

Make incision

- Ⓒ Using image intensification, place a long K-wire or alternative long instrument on the skin over the center of the hole to mark the incision point.

Make a skin incision with a scalpel blade at this location.

- Ⓒ **Note:** Check the reduction, correct alignment of the fragments, and leg length before locking.



3

Drill through both cortices

Instruments

511.300 Radiolucent Drive

ASLS4:

03.025.124 Drill Bit ASLS4, length 145 mm, 3-flute, for RDL

ASLS5:

03.025.125 Drill Bit ASLS5, length 145 mm, 3-flute, for RDL

ASLS6:

03.025.126 Drill Bit ASLS6, length 145 mm, 3-flute, for RDL



- 1 Attach the appropriate drill bit to the radiolucent drive. Using image intensification, insert the tip of the drill bit through the incision and to the bone.
- 2 Incline the drive to center the tip of the drill bit over the locking hole. The drill bit should nearly fill the circle of the locking hole. Hold the drill bit in this position and drill through both cortices. Stop drilling immediately after the tip of the drill penetrates the far cortex. Remove the drill bit.

Caution: Follow all recommended techniques for screw/bolt insertion for the respective nail system. When using mono-cortical locking screws, stop drilling immediately after penetrating the near cortex.



Alternative technique

Instruments

ASLS4:

03.025.082	Drill Bit ASLS4, length 230 mm, 3-flute, for Quick Coupling
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ASLS5:

03.025.083	Drill Bit ASLS5, length 250 mm, 3-flute, for Quick Coupling
------------	--

ASLS6:

03.025.084	Drill Bit ASLS6, length 250 mm, 3-flute, for Quick Coupling
------------	--

- Ⓒ Standard freehand locking technique can be performed without the radiolucent drive. Use the appropriate drill bit shown in the table above.

4

Determine locking screw length

Instrument

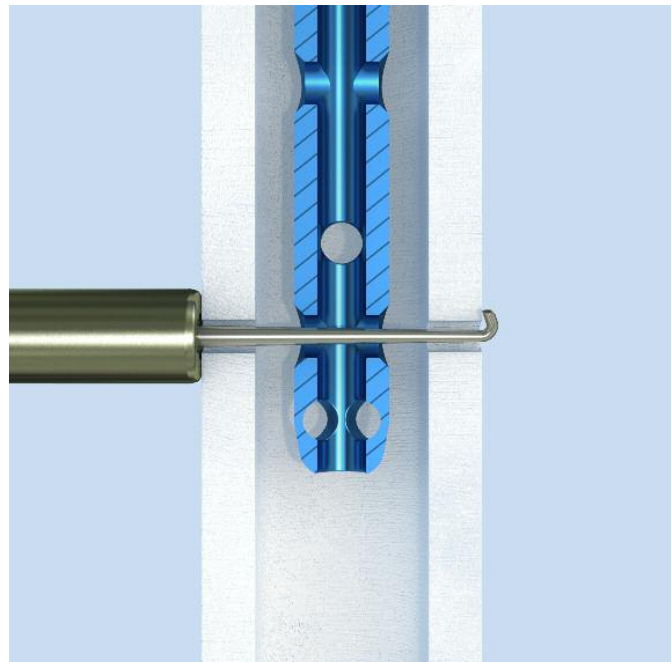
03.025.052 Depth Gauge for ASLS

Insert the depth gauge into the drilled hole. Read the measurement from the outer sleeve of the depth gauge and then select the length of the ASLS screw accordingly.

Caution: Follow all recommended techniques for screw/bolt measurement for the respective nail system.



Note: Ensure that the hook grasps the far cortex and that the protection sleeve is pressed firmly to the bone.



Alternative technique

Instrument

03.010.106 Direct Measuring Device for Drill Bits
L 145 mm

Use the direct measuring device for radiolucent drill bits according to the technique described in the respective Expert Nail technique guide.



5

Ream near cortex

Instruments

ASLS4:

03.025.030 Handreamer ASLS4, length 270 mm,
for near cortex

ASLS5:

03.025.031 Handreamer ASLS5, length 270 mm,
for near cortex

ASLS6:

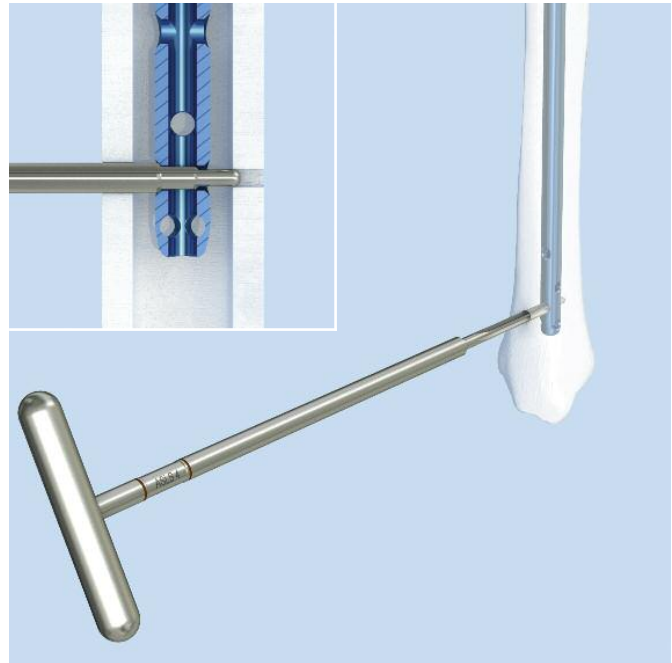
03.025.032 Handreamer ASLS6, length 270 mm,
for near cortex

Align the handreamer with the locking hole axis. Ream the near cortex and clear the passage down to the nail. Remove the handreamer.

- ⓘ If necessary, use image intensification to control the position of the handreamer.

Note: To correctly insert the ASLS sleeve, ensure:

- the near cortex is completely reamed.
 - the passage from near cortex to nail locking hole is cleared.
 - the drilled/reamed hole is in line with the nail locking hole.
-



Alternative technique

Instruments

ASLS4:

03.025.027 Reamer ASLS4, length 145 mm, for near cortex, for Quick Coupling

ASLS5:

03.025.028 Reamer ASLS5, length 145 mm, for near cortex, for Quick Coupling

ASLS6:

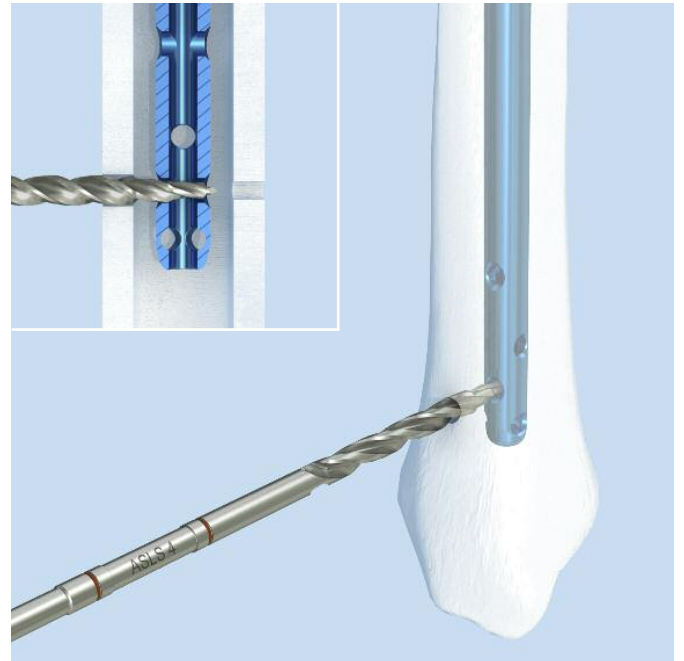
03.025.029 Reamer ASLS6, length 145 mm, for near cortex, for Quick Coupling

Use a power driven reamer to open the near cortex. Align the reamer with the locking hole axis and ream the near cortex. Once the large diameter of the reamer passes through the near cortex, stop reaming immediately. Remove the reamer.

If necessary, clear the passage down to the nail with the handreamer.

- ⓘ If necessary, use image intensification to control the position of the reamer.

Caution: Ensure that the reamer does not damage the nail.



Screw Insertion

1

Mount sleeve

Instruments

ASLS4:

08.025.032S Sleeve for ASLS, Ø 4.0mm, resorbable

ASLS5:

08.025.044S Sleeve for ASLS, Ø 5.0mm, resorbable

ASLS6:

08.025.057S Sleeve for ASLS, Ø 6.0mm, resorbable

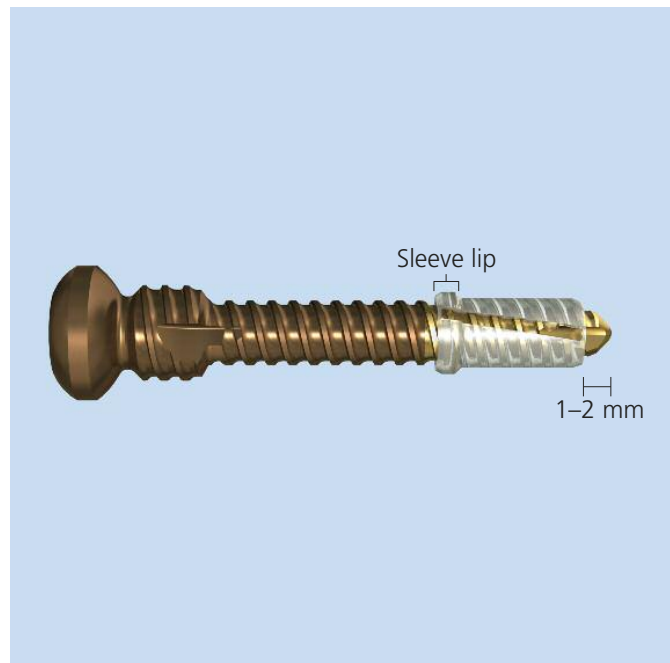
Select the appropriate sleeve.

Insert the sleeve so that the sleeve lip is facing the screw head. Thread the ASLS sleeve onto the ASLS screw. The screw tip will protrude approximately 2 mm beyond the sleeve.

Note: The sleeve is positioned correctly when gold is visible on either side of the sleeve and the screw tip protrudes 1–2 mm beyond the sleeve.

Caution: Do not use ASLS screws without sleeves.

Caution: When mounting the sleeve, stop threading the sleeve once resistance increases. Resistance occurs when the sleeve expands as it moves onto the larger diameter of the screw. An expanded sleeve will prevent screw/sleeve insertion into a locking hole.



Alternative technique

Instruments

ASLS4/5:

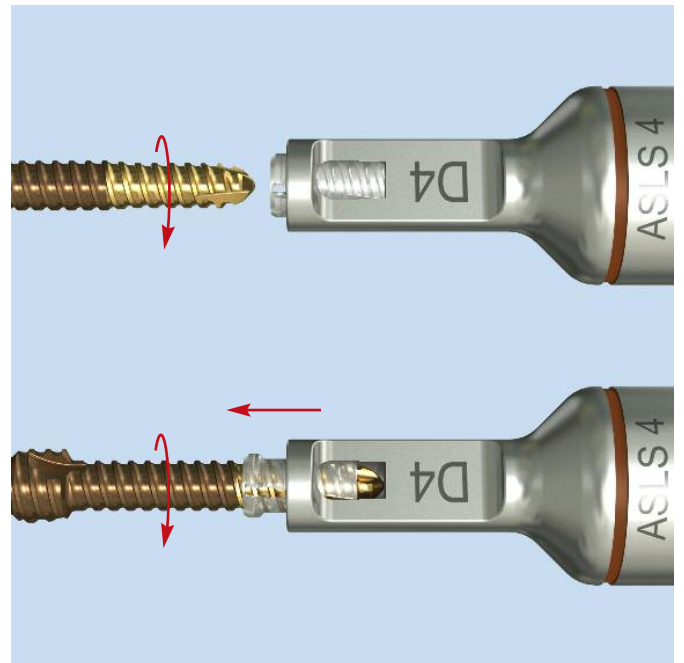
03.025.067 Sleeve Positioner ASLS4 / ASLS5

ASLS6:

03.025.066 Sleeve Positioner ASLS6

Place the sleeve into the appropriate side of the sleeve positioner.

Insert the screw into the sleeve until the sleeve is pushed out of the sleeve positioner.



2

Push screw/sleeve assembly into locking hole

Instruments

03.010.063	Protection Sleeve 12.0/8.0, length 188 mm (for Expert nails)
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03.025.040	Protection Sleeve 11.0/8.0, length 188 mm (for other nail systems)
------------	---

03.010.107	Screwdriver Stardrive, T25, length 330 mm
------------	---

ASLS4:

03.010.064	Drill Sleeve 8.0/3.2, for No. 03.010.063
------------	--

03.010.069	Trocar Ø 3.2 mm, for No. 03.010.064
------------	-------------------------------------

ASLS5:

03.010.065	Drill Sleeve 8.0/4.2, for No. 03.010.063
------------	--

03.010.070	Trocar Ø 4.2 mm, for No. 03.010.065
------------	-------------------------------------

ASLS6:

03.010.066	Drill Sleeve 8.0/5.0, for No. 03.010.063
------------	--

03.010.071	Trocar Ø 5.0 mm, for No. 03.010.066
------------	-------------------------------------

Assemble the appropriate protection sleeve, drill sleeve and trocar and advance the assembly to the bone. Remove the drill sleeve and trocar.

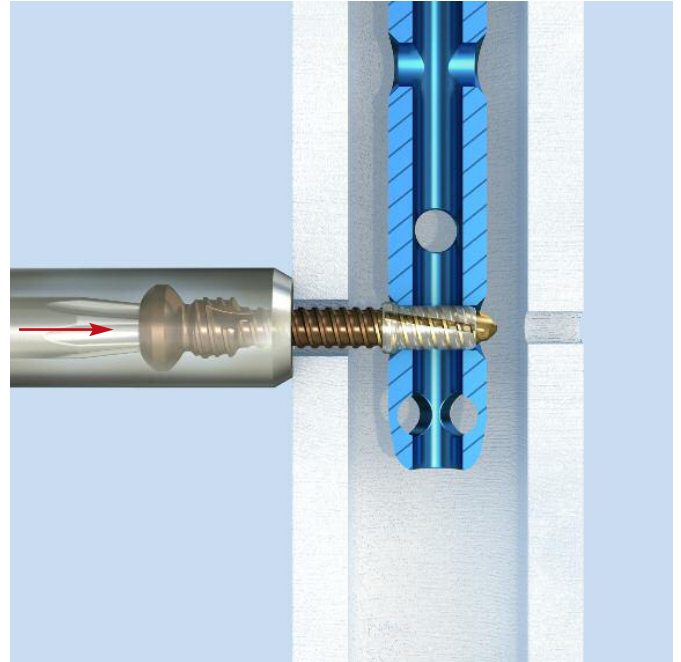
Mount the ASLS screw/sleeve assembly onto the screwdriver.



Push the ASLS screw/sleeve assembly through the protection sleeve, near cortex, and into the nail locking hole. If necessary, lightly tap the screwdriver to insert the screw/sleeve into the locking hole.

Caution: Do not rotate the screwdriver until the sleeve is seated in the locking hole.

Note: If the screw/sleeve assembly cannot be pushed to the nail stop, use the appropriate reamer to completely open the near cortex. (see previous step "Ream near cortex")



Optional technique

Instrument

399.500	Hammer 100 g
---------	--------------

If necessary, lightly hammer to insert the screw into the nail locking hole.

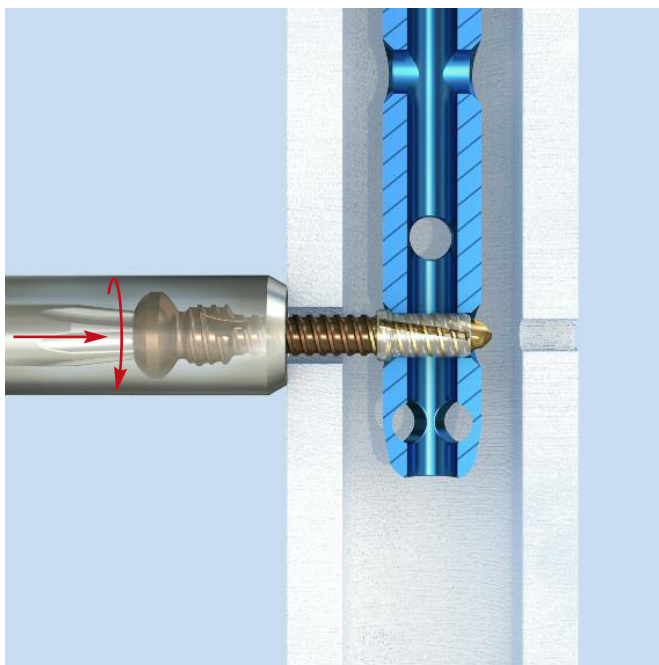


3

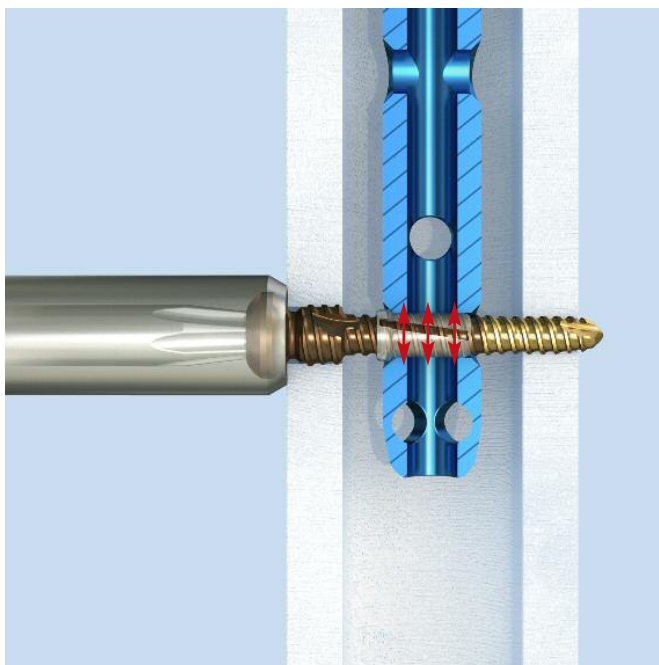
Screw into far cortex

Push the screwdriver to get the screw started. Rotate the screwdriver to advance the screw and engage the screw threads in the far cortex.

Note: The larger diameter core expands the sleeve in the nail, providing angular stability.

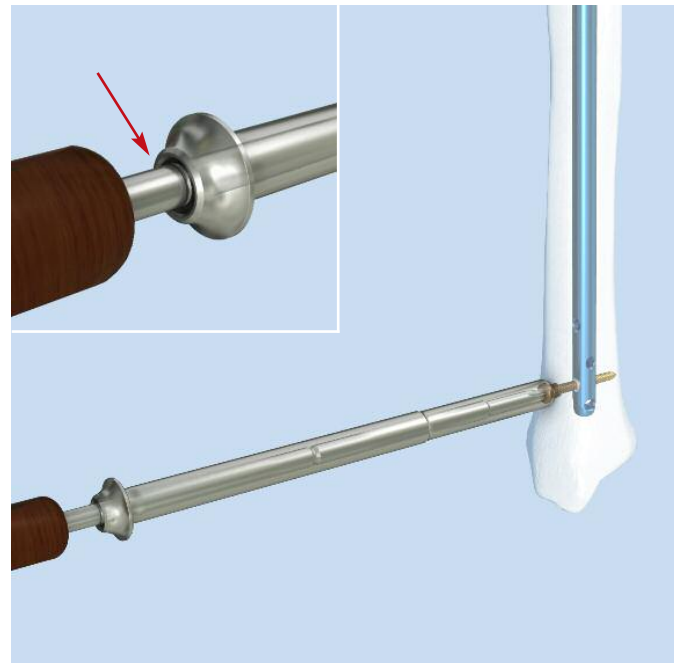


Note: In the final screw position, the largest diameter screw threads will engage the near cortex and the screw tip will protrude beyond the far cortex.



Note: To prevent over insertion of the ASLS screw, use a protection sleeve during screw insertion. Ensure that the protection sleeve is pressed to the bone. Forward the screw until the engraved line on the screwdriver shaft meets the edge of the protection sleeve.

- After insertion of all screws, use image intensification to ensure that reduction is maintained that the screw heads are down the bone and the screws are not over inserted.



4

Intraoperative screw exchange

Instruments

03.010.107 Screwdriver Stardrive, T25, length 330 mm

03.010.112 Holding Sleeve, with Locking Device

Using standard technique, remove the ASLS screw with the screwdriver and if necessary, by pulling with the holding sleeve.

Note: Since the sleeve remains in the nail, it does not need to be removed and exchanged.



Implant Removal

1

Remove screws

Instruments

03.010.107 Screwdriver Stardrive, T25, length 330 mm

03.010.112 Holding Sleeve, with Locking Device

Using standard technique, remove ASLS screws with the screwdriver and if necessary, the holding sleeve.

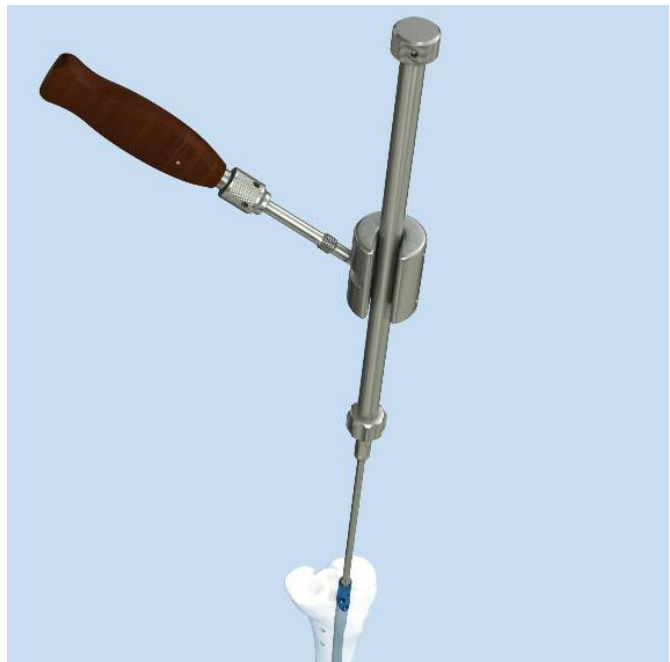


2

Remove nail

Remove the nail using standard technique for the respective nail system.

Note: The sleeves remain in the nail if not fully resorbed and can be removed with the nail during nail removal.



Implants

	ASLS4	ASLS5	ASLS6
Length	Ø 4.0 mm	Ø 5.0 mm	Ø 6.0 mm
26 mm	04.025.416S		
28 mm	04.025.418S		
30 mm	04.025.420S	04.025.520S	
32 mm	04.025.422S	04.025.522S	04.025.622S
34 mm	04.025.424S	04.025.524S	04.025.624S
36 mm	04.025.426S	04.025.526S	04.025.626S
38 mm	04.025.428S	04.025.528S	04.025.628S
40 mm	04.025.430S	04.025.530S	04.025.630S
42 mm	04.025.432S	04.025.532S	04.025.632S
44 mm	04.025.434S	04.025.534S	04.025.634S
46 mm	04.025.436S	04.025.536S	04.025.636S
48 mm	04.025.438S	04.025.538S	04.025.638S
50 mm	04.025.440S	04.025.540S	04.025.640S
52 mm	04.025.442S	04.025.542S	04.025.642S
54 mm	04.025.444S	04.025.544S	04.025.644S
56 mm	04.025.446S	04.025.546S	04.025.646S
58 mm	04.025.448S	04.025.548S	04.025.648S
60 mm	04.025.450S	04.025.550S	04.025.650S
62 mm	04.025.452S	04.025.552S	04.025.652S
64 mm	04.025.454S	04.025.554S	04.025.654S
66 mm	04.025.456S	04.025.556S	04.025.656S
68 mm	04.025.458S	04.025.558S	04.025.658S
70 mm	04.025.460S	04.025.560S	04.025.660S
72 mm	04.025.462S	04.025.562S	04.025.662S
74 mm	04.025.464S	04.025.564S	04.025.664S
76 mm	04.025.466S	04.025.566S	04.025.666S
78 mm	04.025.468S	04.025.568S	04.025.668S
80 mm	04.025.470S	04.025.570S	04.025.670S
85 mm		04.025.575S	04.025.675S
90 mm		04.025.580S	04.025.680S
95 mm		04.025.585S	04.025.685S
100 mm		04.025.590S	04.025.690S
105 mm			04.025.695S
110 mm			04.025.700S
115 mm			04.025.705S
120 mm			04.025.710S
125 mm			04.025.715S



ASLS Screws

- Titanium-6% aluminium-7% niobium alloy (TAN)
- Fully threaded shaft with 3 diameters
 - D1: Provides purchase in reamed near cortex
 - D2: Expands sleeve, thus providing angular stability
 - D3: Holds unexpanded sleeve for screw insertion, provides purchase in far cortex
- Self-tapping, blunt tip
- Stardrive T25 recess
- Available in diameters of 4.0 mm (ASLS4), 5.0 mm (ASLS5) and 6.0 mm (ASLS6)
- Sterile-packed

ASLS sleeves

- 70:30 poly (L-lactide-co-D,L-lactide)
- Bioresorbable, provides 80% decreased fracture site motion during first 12 weeks of healing
- Gradually degrades within 2 years (resorption rate varies per patient and implant site)
- Inner thread for secure fit to screw
- Expands in nail locking hole
- Available in diameters of 4.0 mm (ASLS4), 5.0 mm (ASLS5) and 6.0 mm (ASLS6)
- Sterile-packed



	ASLS4	ASLS5	ASLS6
Diameter	Ø 4.0 mm	Ø 5.0 mm	Ø 6.0 mm
	08.025.032S	08.025.044S	08.025.057S

ASLS Compatibility with Existing Nails

The Angular Stable Locking System is compatible with all Synthes nailing systems fulfilling the following criteria:

- Made of Titanium
- Cannulated

Nailing System	Ø Nail (mm)	ASLS4 Ø 4.0 mm (brown)	ASLS5 Ø 5.0 mm (light blue)	ASLS6 Ø 6.0 mm (dark purple)
Humerus				
Expert Humeral & Proximal Humeral Nail (EHN & EPHN)	7, 9, 11	•		
Proximal Femur				
Proximal Femoral Nail Antirotation - long (PFNa - long)	9, 10, 12, 14		•	
Trochanteric Fixation Nail – long (TFN - long)	10, 11, 12		•	
Proximal Femoral Nail – long (PFN - long)	10, 12, 14		•	
Femur				
Expert Lateral Femoral Nail (Expert LFN)	9–13		•	
	14–16			•
Expert Retrograde/Antegrade Femoral Nail (Expert R/AFN)	9–13		•	
	14–15			•
Cannulated Femoral Nail (CFN)	10–15		•	

* Only compatible with cannulated nails

Nailing System	∅ Nail (mm)	ASLS4 ∅ 4.0 mm (brown)	ASLS5 ∅ 5.0 mm (light blue)	ASLS6 ∅ 6.0 mm (dark purple)
Antegrade Femoral Nail (AFN)	9–14		•	
Distal Femoral Nail (DFN)*	10, 12, 13		•	•
Tibia				
Expert Tibial Nail (ETN)*	8–9	•		
	10–13		•	
Cannulated Tibia Nail (CTN)	10–13		•	
Ankle				
Expert Hindfoot Arthrodesis Nail (Expert HAN)	10, 12, 13		•	•

* Only compatible with cannulated nails

Instruments

General instruments

03.010.063 Protection Sleeve 12.0/8.0, length 188 mm
(For Expert nails)



03.025.040 Protection Sleeve 11.0/8.0, length 188 mm
(For other nail systems)



03.010.107 Screwdriver StarDrive, T25, length 330 mm



03.010.112 Holding Sleeve, with Locking Device



03.025.052 Depth Gauge for ASLS



03.025.067 Sleeve Positioner ASLS4/5



03.025.066 Sleeve Positioner ASLS6



399.500 Hammer 100 g



Instruments for targeted locking

03.010.064 Drill Sleeve 8.0/3.2, for No. 03.010.063
 03.010.065 Drill Sleeve 8.0/4.2, for No. 03.010.063
 03.010.066 Drill Sleeve 8.0/5.0, for No. 03.010.063



03.010.069 Trocar Ø 3.2 mm, for No. 03.010.064
 03.010.070 Trocar Ø 4.2 mm, for No. 03.010.065
 03.010.071 Trocar Ø 5.0 mm, for No. 03.010.066



03.025.104 Drill Bit ASLS4, calibrated, length 331 mm,
 3-flute, for Quick Coupling,
 for No. 03.010.064
 03.025.105 Drill Bit ASLS5, calibrated, length 331 mm,
 3-flute, for Quick Coupling,
 for No.03.010.065
 03.025.106 Drill Bit ASLS6, calibrated, length 331 mm,
 3-flute, for Quick Coupling,
 for No. 03.010.066



03.025.134 Reamer ASLS4, length 268 mm, for near
 cortex, for Quick Coupling
 03.025.135 Reamer ASLS5, length 288 mm,
 for near cortex, for Quick Coupling
 03.025.136 Reamer ASLS6, length 288 mm,
 for near cortex, for Quick Coupling



03.025.030 Hand Reamer ASLS4, length 270 mm,
 for near cortex
 03.025.031 Hand Reamer ASLS5, length 270 mm,
 for near cortex
 03.025.032 Hand Reamer ASLS6, length 270 mm,
 for near cortex



Instruments for freehand locking

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- 03.025.027 Reamer ASLS4, length 145 mm,
for near cortex, for Quick Coupling
- 03.025.028 Reamer ASLS5, length 145 mm,
for near cortex, for Quick Coupling
- 03.025.029 Reamer ASLS6, length 145 mm,
for near cortex, for Quick Coupling



-
- 03.025.030 Hand Reamer ASLS4, length 270 mm,
for near cortex
- 03.025.031 Hand Reamer ASLS5, length 270 mm,
for near cortex
- 03.025.032 Hand Reamer ASLS6, length 270 mm,
for near cortex



-
- 03.025.124 Drill Bit ASLS4, length 145 mm,
3-flute, for RDL
- 03.025.125 Drill Bit ASLS5, length 145 mm,
3-flute, for RDL
- 03.025.126 Drill Bit ASLS6, length 145 mm,
3-flute, for RDL



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- 03.025.082 Drill Bit ASLS4, length 230 mm, 3-flute,
for Quick Coupling
- 03.025.083 Drill Bit ASLS5, length 250 mm, 3-flute,
for Quick Coupling
- 03.025.084 Drill Bit ASLS6, length 250 mm, 3-flute,
for Quick Coupling



Vario Case

68.025.001 Vario Case for ASLS Instrument Set,
(without Lid, without Contents)

68.025.003 Tray, (size 1/2,) long, for Instruments
ASLS6, for Vario Case No. 68.025.001

689.507 Lid (Stainless Steel), size 1/1, for Vario Case

Synthes Trauma Biomaterials Overview

Synthetic and allogenic bone replacement materials have the advantage of uniform quality, unlimited availability and absence of potential complications at a donor site.

Additionally, the application of synthetic and allogenic bone graft substitutes reduces the duration of the surgery.

Synthes offers a wide range of synthetic biomaterial products in different application forms and with distinct biological properties:

chronOS



chronOS Perfusion Concept



chronOS Inject



Injectable remodelling

Norian SRS



Injectable stability

DBX



Osteoinductive power

MTF Musculoskeletal
Transplant
Foundation
THE ALLOGRAFT LEADER[®]
Facilitated through Synthes

Furthermore a comprehensive portfolio of allograft products is available in selected countries.

For more detailed information about a specific product or availability of allografts please contact your local Synthes representative.

Compact Air Drive II

511.701 Compact Air Drive II

511.300 Radiolucent Drive

511.730 Drill Chuck, with Key

511.750 AO/ASIF Quick Coupling

Sets

68.025.001	Vario Case for ASLS Instrument Set, without lid, without contents
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689.507	Lid for Vario Case
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General instruments

03.010.112	Holding Sleeve, with Locking Device
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399.500	Hammer, small
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03.010.063	Protection Sleeve 12.0/8.0, length 188 mm
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03.010.107	Screwdriver Stardrive, T25, length 330 mm
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03.025.040	Protection Sleeve 11.0/8.0, length 188 mm
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03.025.052	Depth Gauge for ASLS
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03.025.067	Sleeve Positioner ASLS4/5
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03.025.066	Sleeve Positioner ASLS 6
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ASLS4

03.010.064	Drill Sleeve 8.0/3.2, for No. 03.010.063
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03.010.069	Trocar Ø 3.2 mm, for No. 03.010.064
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03.025.027	Reamer ASLS4, length 145 mm, for near cortex, for Quick Coupling
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03.025.082	Drill Bit ASLS4, length 230 mm, 3-flute, for Quick Coupling
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03.025.104	Drill Bit ASLS4, calibrated, length 331 mm, 3-flute, for Quick Coupling, for No. 03.010.064
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03.025.124	Drill Bit ASLS4, length 145 mm, 3-flute, for RDL
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03.025.134	Reamer ASLS4, length 268 mm, for near cortex, for Quick Coupling
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03.025.030	Handreamer ASLS4, length 270 mm, for near cortex
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ASLS5

03.010.065	Drill Sleeve 8.0/4.2, for No. 03.010.063
03.010.070	Trocar Ø 4.2 mm, for No. 03.010.065
03.025.028	Reamer ASLS5, length 145 mm, for near cortex, for Quick Coupling
03.025.083	Drill Bit ASLS5, length 250 mm, 3-flute, for Quick Coupling
03.025.105	Drill Bit ASLS5, calibrated, length 331 mm, 3-flute, for Quick Coupling, for No. 03.010.065
03.025.125	Drill Bit ASLS5, length 145 mm, 3-flute, for RDL
03.025.135	Reamer ASLS5, length 288 mm, for near cortex, for Quick Coupling
03.025.031	Handreamer ASLS5, length 270 mm, for near cortex

ASLS6 (optional)

68.025.003	Insert for instruments ASLS6, size ½ long, for Vario Case No. 68.025.001
03.010.066	Drill Sleeve 8.0/5.0, for No. 03.010.063
03.010.071	Trocar Ø 5.0 mm, for No. 03.010.066
03.025.029	Reamer ASLS6, length 145 mm, for near cortex, for Quick Coupling
03.025.084	Drill Bit ASLS6, length 250 mm, 3-flute, for Quick Coupling
03.025.106	Drill Bit ASLS6, calibrated, length 331 mm, 3-flute, for Quick Coupling, for No. 03.010.066
03.025.126	Drill Bit ASLS6, length 145 mm, 3-flute, for RDL
03.025.136	Reamer ASLS6, length 288 mm, for near cortex, for Quick Coupling
03.025.032	Handreamer ASLS6, length 270 mm, for near cortex

Angular stable locking of intramedullary nails

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