

4.5 MM VA-LCP CURVED CONDYLAR PLATE

Part of the Variable Angle
Periarticular Plating System



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4.5 MM VA-LCP CURVED CONDYLAR PLATES

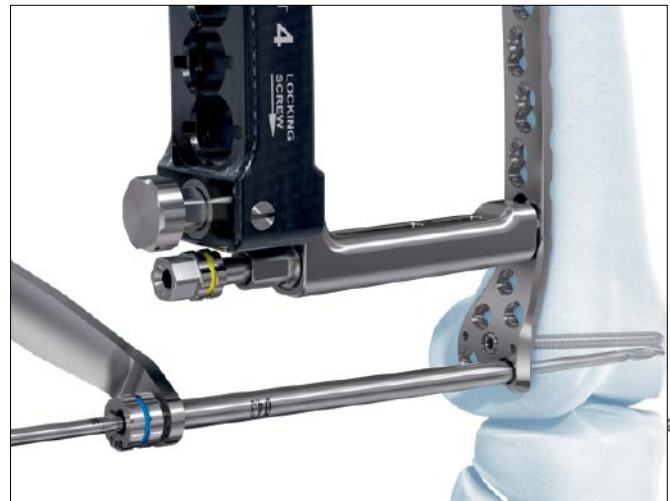
The Synthes 4.5 mm VA-LCP Curved Condylar Plate is part of the VA-LCP Periarticular Plating System which merges variable angle locking screw technology with conventional plating techniques.

The 4.5 mm VA-LCP Curved Condylar Plate System has many similarities to standard locking fixation methods, with a few important improvements. Variable angle locking screws provide the ability to create a fixed-angle construct while also allowing the surgeon the freedom to choose the screw trajectory before “fixing” the angle of the screw.

A fixed-angle construct provides advantages in osteopenic bone or multifragmentary bridge-plated fractures where screws do not rely on plate-to-bone compression to resist patient load, but function similarly to multiple, small, angled blade plates.

The variable angle locking compression plate (VA-LCP) has variable angle Combi holes in the plate shaft that combine a dynamic compression unit (DCU) hole with a variable angle locking screw hole. The variable angle Combi hole provides the flexibility of axial compression and variable angle locking capability throughout the length of the plate shaft.

Note: For information on fixation principles using conventional and locked plating techniques, please refer to the Synthes Large Fragment LCP Instrument and Implant Set Technique Guide.



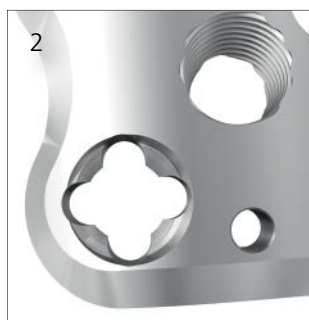


4.5 mm VA-LCP Curved Condylar Plate System

The 4.5 mm VA-LCP Curved Condylar Plate System provides the flexibility to lock screws in trajectories that can diverge from the central axis of the plate hole.

- Plate includes variable angle locking holes and variable angle Combi holes
- Available with 6, 8, 10, 12, 14, 16, 18, 20, or 22 variable angle Combi holes in the shaft to accommodate fracture patterns that include shaft fractures with articular fragments
- Manufactured in stainless steel and titanium alloy*
- Permits use of minimally invasive surgical technique
- Screws can be angled anywhere within a 30° cone around the central axis of the plate hole (Figure 1)
- Four columns of threads in the variable angle locking hole provide four points of threaded locking between the VA-LCP plate and the variable angle locking screw, forming a fixed- angle construct at the desired screw angle (Figure 2)
- The head of the 5.0 mm variable angle locking screw is rounded to facilitate various angles within the locking hole (Figure 3)

Note: Central hole in the head of the plate is a fixed angle locking hole.



*Implant-quality 316L stainless steel or titanium alloy (Ti-6Al-7Nb)

AO PRINCIPLES

In 1958, the AO formulated four basic principles, which have become the guidelines for internal fixation.¹ They are:

Anatomic reduction

Fracture reduction and fixation to restore anatomical relationships.

Stable fixation

Stability by fixation or splintage, as the personality of the fracture and the injury requires.

Preservation of blood supply

Preservation of the blood supply to soft tissue and bone by careful handling.

Early, active mobilization

Early and safe mobilization of the part and patient.

1. Müller ME, M Allgöwer, R Schneider, and H Willenegger: Manual of Internal Fixation, 3rd Edition. Berlin: Springer-Verlag. 1991.

INDICATIONS

The Synthes 4.5 mm VA-LCP Curved Condylar Plate System is indicated for buttressing multifragmentary distal femur fractures including: supracondylar; intra-articular and extra-articular condylar fractures, periprosthetic fractures, fractures in normal or osteopenic bone, nonunions and malunions.



PREPARATION

1

Prepare preoperative plan

Required sets

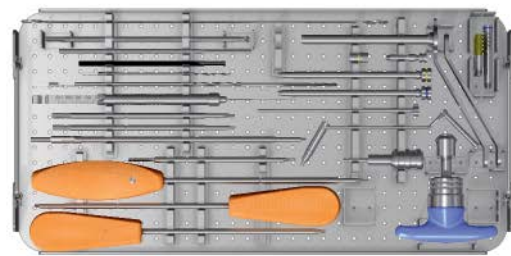
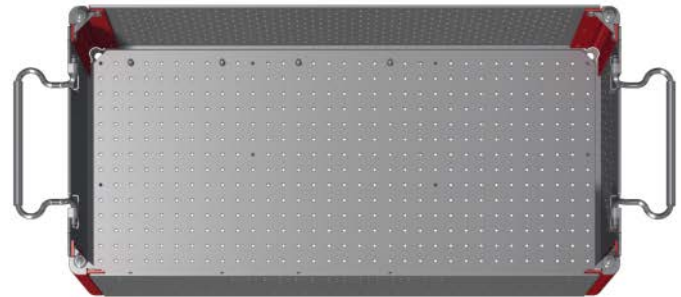
01.231.015– 01.231.018	4.5 mm VA-LCP Curved Condylar Plate Set
01.231.016	4.5 mm VA-LCP Curved Condylar Aiming Instrument Set
01.231.017– 01.231.019	4.5 mm VA-LCP Instrument and Screw Set

Optional sets

01.100.002	3.5 mm Low Profile Pelvic System Implant Set
105.909	Periarticular Reduction Forceps Set
115.700	Large Distractor
115.720/ 115.740	Large External Fixator Set
115.85	Pelvic Instrument Set
125.885	Pelvic Implant Set

Optional instrument

03.100.048	6.0 mm LCP Attachment Pin (used with Large Distractor)
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Complete a preoperative radiographic assessment and prepare the preoperative plan. Position the patient supine on a radiolucent operating table. Viewing the distal femur under fluoroscopy in both the lateral and AP views is necessary.

2

Attach insertion handle

Instruments

03.231.001	Insertion Handle for 4.5 mm VA-LCP Curved Condylar Plate
03.231.005	Interlocking Bolt for 4.5 mm VA-LCP Curved Condylar Plate Insertion Handle
03.231.006	Nut for Interlocking Bolt for 4.5 mm VA-LCP Curved Condylar Plate
321.16	Combination Wrench, 11 mm width across flats

Thread the nut onto the interlocking bolt.

Position the insertion handle so that the spherical pins on the underside align with the dimples around the first Combi hole of the appropriate 4.5 mm VA-LCP curved condylar plate. Insert the interlocking bolt, with nut, into the through hole of the insertion handle and thread the tip into the threaded portion of the Combi hole until it is firmly finger-tightened.

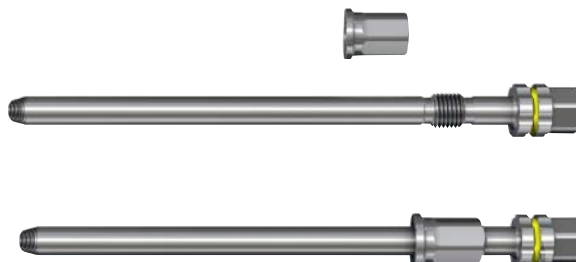
Tighten the interlocking bolt with the combination wrench.

Note: It is important that the appropriate 4.5 mm VA-LCP curved condylar plate is placed flat on the back table when positioning the insertion handle and interlocking bolt, to ensure the interlocking bolt is perpendicular to the plate and not cross threaded into the Combi hole.

Alternative instrument

03.120.022	Handle for Percutaneous Threaded Drill Guides
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The handle for the percutaneous threaded drill guides can be used to insert the interlocking bolt, with nut, into the through hole of the insertion handle to thread the tip into the threaded portion of the Combi hole until it is firmly tightened.



3 Secure aiming arm to plate

Instruments

03.231.003/ 03.231.004	Aiming Arm for 4.5 mm VA-LCP Curved Condylar Plate (left or right)
03.231.007	Locking/Neutral Guide for 4.5 mm VA-LCP Curved Condylar Aiming Arm
321.16	Combination Wrench, 11 mm width across flats
324.215	2.5 mm Percutaneous Wire Guide for 5.0 mm Locking Screws

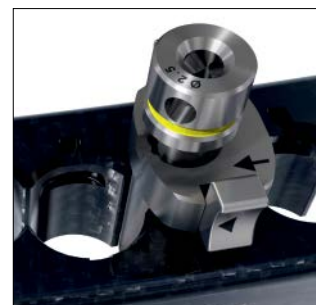
Attach the appropriate aiming arm to the insertion handle.

Use the combination wrench to secure the connection bolt to the insertion handle.

Insert a locking/neutral guide into the hole in the aiming arm corresponding with the most proximal Combi hole in the plate. Orient the arrow on the locking/neutral guide in the direction of the "LOCKING" arrow on the aiming arm.

Insert the 2.5 mm percutaneous wire guide assembly through the locking/neutral guide and securely thread it into the plate. Tighten the wire guide to the plate to achieve a stable construct between the aiming arm and plate.

Using the combination wrench, tighten the nut on the interlocking bolt to compress the insertion handle to the plate. The insertion handle should be securely attached to the plate and can now be used for plate insertion.



4

Remove aiming arm

Remove the 2.5 mm percutaneous wire guide, locking/neutral guide and aiming arm to prepare for initial plate insertion.

5

Make incision

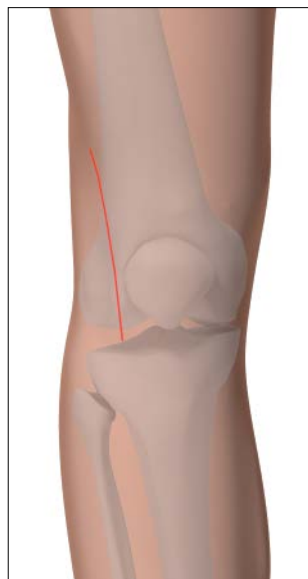
Lateral incision

A lateral incision is recommended for a simple articular (AO classification 33-C1) or extra-articular fracture (AO classification 32- or 33-A). The incision begins at Gerdy's tubercle.

Note: The incision can be extended if necessary to improve visualization of the articular surface or lateral metaphysis and diaphysis. It may not always be appropriate to use limited incisions and closed reduction techniques.

Lateral parapatellar incision

In the presence of a complex intra-articular fracture (AO classifications 33-C2 or C3), perform a lateral parapatellar approach. Perform an arthrotomy to expose the joint for reduction. Translate the patella and extensor mechanism as necessary with eversion of the patella in special circumstances. Ensure adequate exposure of the joint for an anatomic reduction.



Lateral



Lateral parapatellar

REDUCE ARTICULAR SURFACE

1

Reduce articular surface

Instruments

Pointed Reduction Forceps

Kirschner Wires

Reduce and temporarily secure the articular fragments with pointed reduction forceps and/or Kirschner wires. If a Hoffa plane fracture is present, the posterior condylar fragments must be reduced and provisionally stabilized with K-wires inserted from anterior to posterior.

2

Fix reduction with screws

Secure the condyles with appropriately placed screws. The 4.5 mm VA-LCP curved condylar plate may be held laterally on the condyle to select an area where the screw(s) will not interfere with the footprint of the plate. Placing screws around the periphery of the condyle, choosing screws with smaller heads [e.g. 3.5 mm screws], and sinking screws such that they are nearly flush with the lateral condylar cortical edge will ease subsequent plate insertion and improve fit.

For fixation of a posterior articular fragment (Hoffa fracture), place 3.5 mm cortex screws or 4.0 mm cancellous bone screws from anterior to posterior and countersink the screwheads so they lie below the level of articular cartilage. An appropriate headless compression screw may also be used.

Note: Most lengths of 3.5 mm cortex screws are located in the Pelvic Implant Set (125.885) and the 3.5 mm Low Profile Pelvic System Implant Set (01.100.002).



INSERT PLATE

1

Insert plate

Using the insertion handle assembly, insert the plate submuscularly distal to proximal. Slide the plate proximally until the plate head is oriented properly on the lateral condyle. The aiming arm can be attached either before or after insertion of the plate. In larger patients, it is advantageous to attach the aiming arm after insertion as it has the potential to impinge upon the lateral soft tissues during insertion.

Note: The aiming arm can be attached to the insertion handle either before or after plate insertion. In larger patients, it may be advantageous to attach the aiming arm to the insertion handle after plate insertion to minimize risk of impinging any soft tissues during insertion.



2

Determine plate position

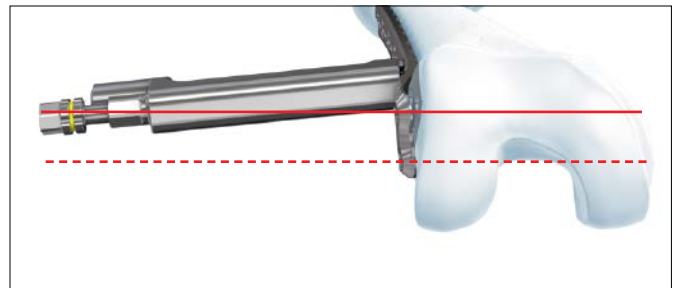
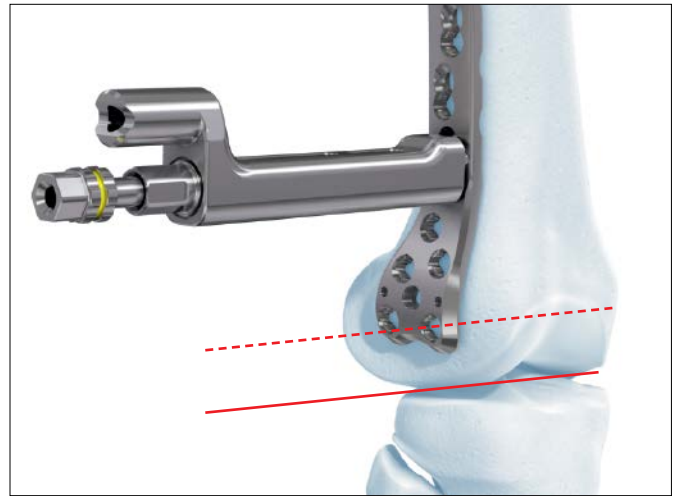
Optional instruments

310.243	2.5 mm Drill Tip Guide Wire, 200 mm
324.215	2.5 mm Percutaneous Wire Guide for 5.0 mm Locking Screws

Place a Kirschner wire across the femoral condyles at the level of the knee to indicate the joint axis. Place a second Kirschner wire across the patellofemoral joint on the troclear surface.

Important: Before proceeding, confirm plate head placement.

- Use clinical examination and radiographic imaging to confirm that the plate is properly oriented on the condyle under a lateral image. Because the shaft of the femur is frequently out of alignment with the distal fragment, proper plate placement can be determined by orienting the distal shape to that of the condyle. The plate should be oriented so that the shape mimics the condyle anteriorly and posteriorly.



The goal is for the plate to be positioned parallel to the anterior portion of the lateral femoral condyle which is typically internally rotated approximately 10-15° with respect to the vertical plane. The plate was designed such that the anterior edge of the implant parallels the anterior cortical margin at the metaphyseal level. Similarly, the posterior edge of the implant is curved to mimic the posterior anatomic curvature extending from the epiphyseal to the metaphyseal region.

Important: Before proceeding, confirm plate head placement.

When using the plate as a reduction tool, proper plate placement with respect to the distal segment must be ensured prior to proceeding. Secure the plate position by using either reduction forceps or by inserting at least two guide wires before inserting the first screw in the distal segment. Wires can be inserted through the K-wire holes in the plate head or through one of the plate head holes by using the 2.5 mm wire guide, threaded at 0° in relation to the plate.

3

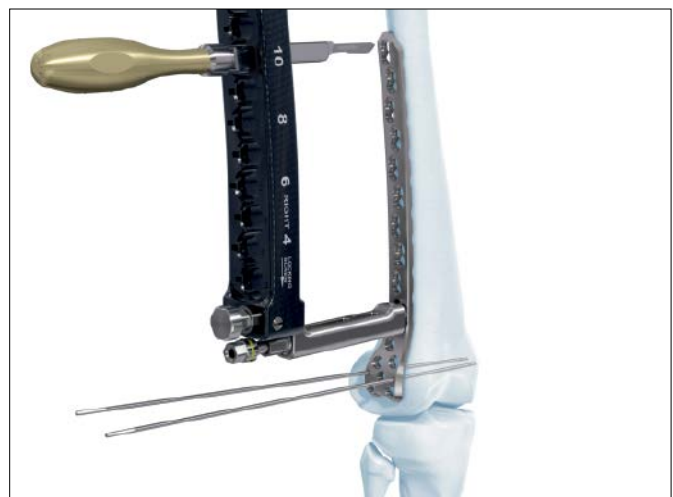
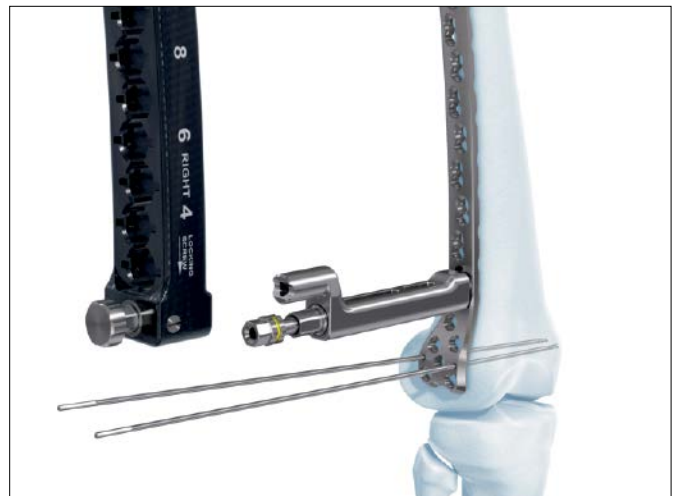
Secure aiming arm to plate

Instruments

03.120.015	Trocar with Handle
03.231.003	Aiming Arm for 4.5 mm VA-LCP Curved Condylar Plate, left
03.231.004	Aiming Arm for 4.5 mm VA-LCP Curved Condylar Plate, right
03.231.007	Locking/Neutral Guide for 4.5 mm VA-LCP Curved Condylar Aiming Arm
321.16	Combination Wrench, 11 mm width across flats

Reattach the aiming arm to the insertion handle. Fingertighten the connection bolt to secure the aiming arm to the insertion handle. For final tightening use the combination wrench to secure the connection bolt to the insertion handle.

Locate the hole in the aiming arm that corresponds with the most proximal Combi hole in the plate. The aiming arm is numbered to facilitate locating the most proximal hole in the plate. Make a skin incision at this location. The incision should be in line with the direction of future trocar and cannula insertion.



Optional instrument

03.120.016 Scalpel Handle

Attach a #11 blade to the scalpel handle. The scalpel handle will pass through the aiming arm holes and assist in performing a minimally invasive and accurate incision. The scalpel handle is designed such that the blade is offset with respect to the handle. It should be inserted, backed out, rotated 180°, and reinserted. The goal is to create an incision through the skin, IT band, and vastus lateralis fascia that is larger than the cannula that is to be inserted.

An adequate incision must be made in order to prevent soft tissue impingement when inserting the cannula.

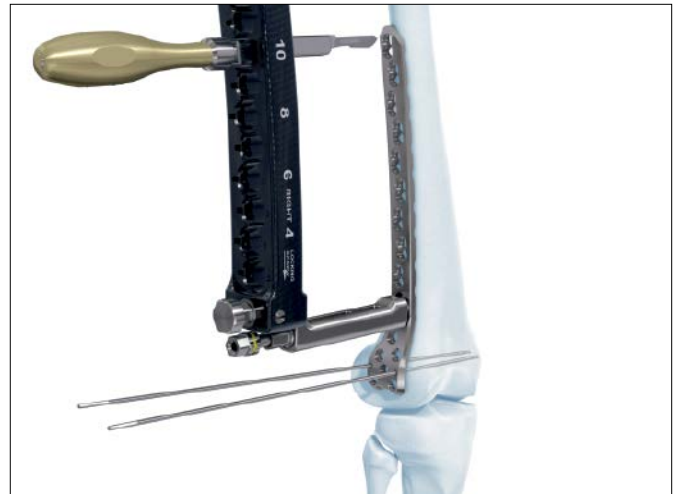
Note: Always remove the scalpel blade before storage in the graphic case.

Insert the trocar with handle into a locking/neutral guide for VA-LCP curved condylar plates and align the self-retaining features until the trocar snaps into place within the locking/neutral guide.

Orient the arrow on the locking/neutral guide in the direction of the "LOCKING" arrow on the aiming arm, and then use the assembled trocar and locking/neutral guide to push down to the plate through the incision.

Push the assembly completely down, aligning the self-retaining features, until it snaps completely into the aiming arm. Take care not to place excessive pressure on the guide as deflection can occur between the guide and the plate in the face of excessive pressure. The potential for this is increased with longer plates inserted through small incisions in larger patients.

Remove the trocar with handle by depressing its release mechanism and pulling it away from the locking/neutral guide.



Instruments

03.120.022	Handle for Percutaneous Threaded Drill Guides
03.120.026	2.5 mm Drill Tip Guide Wire, 300 mm
324.215	2.5 mm Percutaneous Wire Guide for 5.0 mm Locking Screws

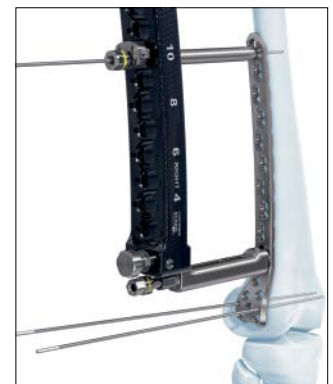
Thread the handle into the wire guide. Insert the handle and wire guide assembly through the locking/neutral guide, and securely thread it into the plate. Turn the handle counter-clockwise to disengage and remove it from the guide.

Note: Be sure to securely tighten the wire guide to the plate to achieve a stable construct between the aiming arm and the plate.

Insert a 2.5 mm drill tip guide wire into the bone through the percutaneous wire guide only after ensuring appropriate length and rotation have been achieved through the fracture site. Small changes in coronal and sagittal plane alignment will still be possible after this step.

Note: To ensure precise targeting using the aiming arm, it is important to build the box by inserting the 2.5 mm wire.

If necessary, to assist in aligning the aiming arm with the plate, the trocar with handle and locking neutral guide can be inserted into the most distal hole of the proximal fragment. The trocar assembly may assist in securing the 2.5 mm percutaneous wire guide into the most proximal hole in the plate to complete the box so that a 2.5 mm wire can be inserted to secure the aiming arm to the plate.



4

Use pull reduction device (optional)

Instruments

03.120.023	Pull Reduction Device for 4.3 mm Percutaneous Drill Guide
03.231.007	Locking/Neutral Guide for 4.5 mm VA-LCP Curved Condylar Plate Aiming Arm
321.16	Combination Wrench, 11 mm width across flats
324.203	4.3 mm Percutaneous Threaded Drill Guide

Additional correction can be completed before placement of screws in both main fracture fragments. The pull reduction device is placed through the guide and plate holes to pull or push bone fragments relative to the plate.

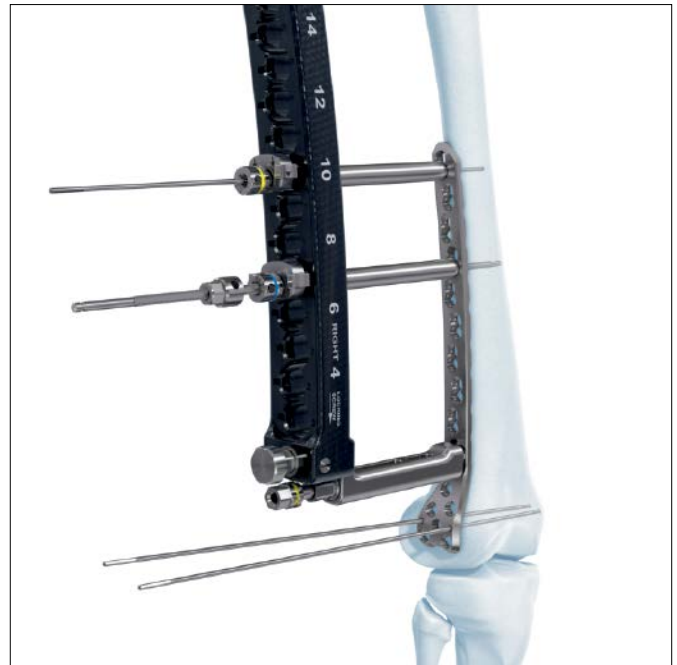
This instrument can be used for:

- Minor varus/valgus adjustment (approximately 2°–4°)
- Coronal plane translational adjustments
- tabilization of plate-bone orientation during insertion of the first screws
- lignment of segmental fractures
- Predrilling dense or thick cortical bone before placing a 5.0 mm VA locking screw

Note: The pull reduction device must be used with a 4.3 mm percutaneous drill guide and a locking/neutral guide

Thread the nut for pull reduction device over the tip of the pull reduction device.

When pull reduction device has been attached to a power tool (quick coupling), insert it through a 4.3 mm percutaneous threaded drill guide that has been threaded into the plate.



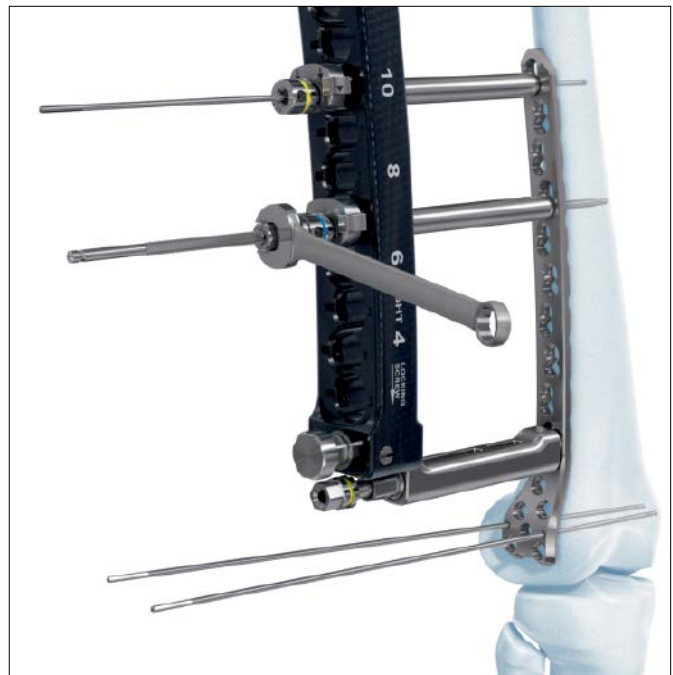
With the nut in its highest position possible, begin power insertion of the pull reduction device. Stop insertion before the tip of the pull reduction device reaches the far cortex.

Note: Attempting to advance beyond this point may cause threads to strip in bone.

- ① Remove the power tool and begin tightening the nut toward the drill guide, while monitoring progress under radiographic imaging.

Stop when the desired reduction is achieved. If the plate is properly positioned distally parallel to the anterior half of the lateral femoral condyle, it will be slightly internally rotated with respect to the shaft proximally. This has the potential to create minor sagittal plane changes when using this technique for coronal plane alignment.

The pull reduction device is 4.3 mm in diameter and calibrated for screw length measurement to allow later placement of a 5.0 mm VA locking screw in the same hole.



Optional instrument

03.231.002	Stopper for 4.5 mm VA-LCP Condylar Plate Aiming Arms
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Mark each screw location in the aiming arm using a stopper for reference as screw insertion proceeds.

INSERT SCREW IN CENTRAL PLATE HEAD HOLE

Option A: 5.0 mm Solid Variable Angle Screw

1

Drill

Instruments

310.431 4.3 mm Drill Bit, quick coupling, 180 mm

312.449 4.3 mm Threaded Drill Guide

319.10 Depth Gauge, for large screws

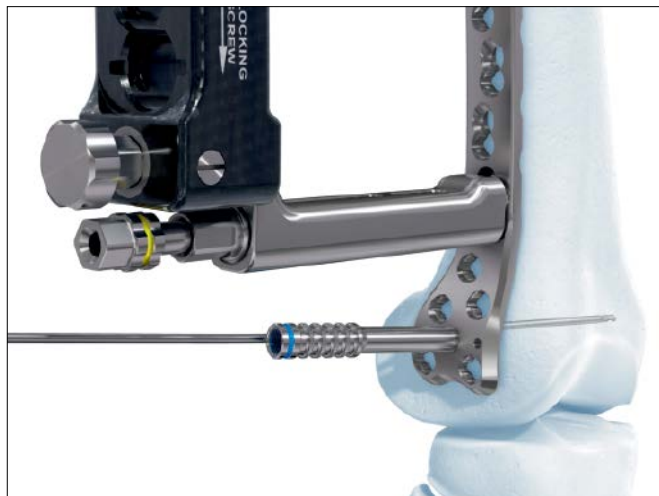
Alternative instruments

324.203 4.3 mm Percutaneous Threaded Drill Guide

324.213 4.3 mm Percutaneous Drill Bit, quick coupling, 300 mm, calibrated

Insert a 4.3 mm threaded drill guide into the central head hole of the plate. Insert the 4.3 mm drill bit through the drill guide, parallel to the joint axis and perpendicular to the anterior half of the lateral femoral condyle.^{2,3}

Advance the drill bit until it reaches the medial wall of the femoral condyle.

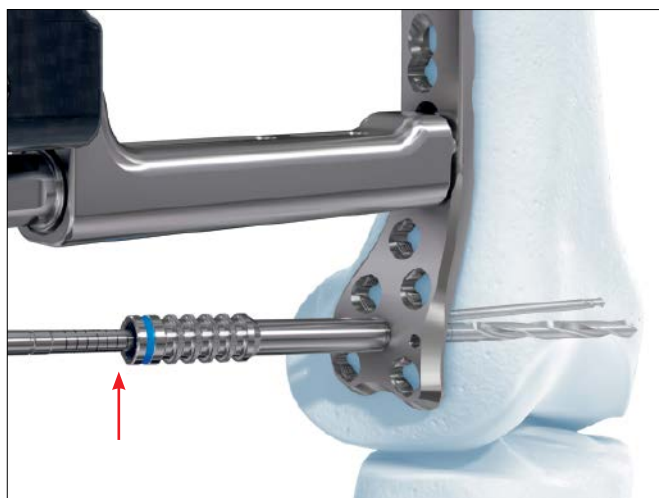


2

Measure for screw length

To measure for screw length, read off of the calibrated 4.3 mm drill bit.

Remove the drill bit and drill guide.



2. Karunakar MA, Kellam JF. "Avoiding malunion with 95° fixed-angle distal femoral implants." *J Orthop Trauma* 2004;18(7): 443-445.
3. Maier, A., Cordey, J., Regazzoni P. "Prevention of malunions in the rotation of complex fractures of the distal femur using the Dynamic Condylar Screw (DCS): an anatomical graphic analysis using computed tomography on cadaveric specimens." *Injury* 2000; 31(suppl 2): S-B63-S-B69.

Insert Screw in Central Plate Head Hole
Option A: 5.0 mm Solid Variable Angle Screw

3

Insert screw

Instruments

03.231.013	6 Nm Torque Limiting Blue T-Handle, 6 mm hex coupling
03.231.015	SD25 StarDrive Screwdriver Shaft, 6 mm hex coupling, 180 mm
314.119	StarDrive Screwdriver Shaft, T25, quick coupling

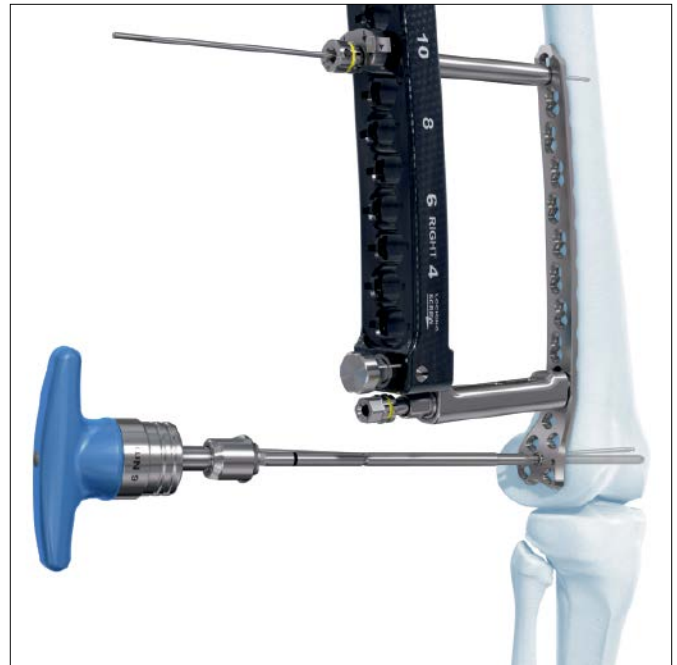
Insert the appropriate length variable angle screw.

The 5.0 mm variable angle locking screws may be inserted using power equipment and the T25 StarDrive screwdriver shaft.

Important: Confirm screw position and length prior to final tightening with the 6 Nm torque limiting handle. Final tightening must be done manually using the 6 Nm torque limiting handle and SD25 StarDrive screwdriver shaft. The 6 Nm torque limiting handle should not be used for screw removal.

Optional technique: Using fixed-angle instruments

Alternatively, the 4.3 mm percutaneous threaded drill guide may be inserted into the central head hole of the plate and the screw measurement can be read off of the calibrated 4.3 mm percutaneous drill bit.



Notes:

- **Although screws may be inserted in any order, it is usually advantageous to start with the central screw to ensure alignment.**
- **If required, lag screw reduction of a fragment must be accomplished before inserting locking screws into the fragment. Lag screw reduction can be accomplished using a 5.0 mm cannulated conical screw,* or a 4.5 mm cortex screw, in the central hole of the plate head. For interfragment compression the 5.0 mm screw nut can be used with 5.0 mm cannulated conical screws. Conical and cortex screws may be replaced with locking screws after reduction is complete.**

* 5.0 mm cannulated conical screws can be found in the Periarticular Plating System and the 5.0 Cannulated Conical Screw Set.

Option B: 5.0 mm Cannulated Variable Angle Screw

1 Insert drill tip guide wire

Instruments

310.243 2.5 mm Drill Tip Guide Wire, 200 mm

324.174 2.5 mm Wire Guide for 5.0 mm screws

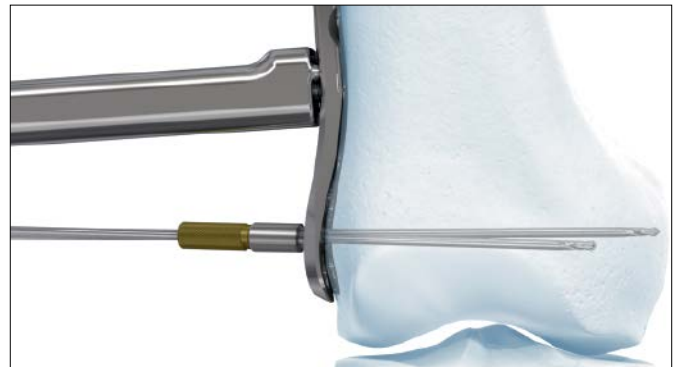
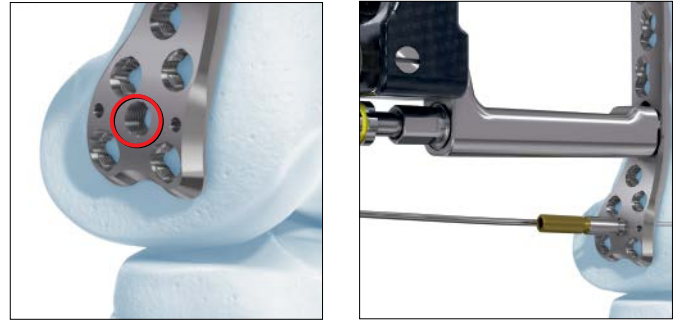
Alternative Instruments

324.215 Percutaneous Wire Guide for 5.0 mm Locking Screws

03.120.026 2.5 mm Drill Tip Guide Wire, 300 mm

Insert a 2.5 mm drill tip guide wire through the preassembled 2.5 mm wire guide, parallel to the joint axis and perpendicular to the anterior half of the lateral femoral condyle.

Advance the guide wire through the wire guide until it reaches the medial wall of the femoral condyle.

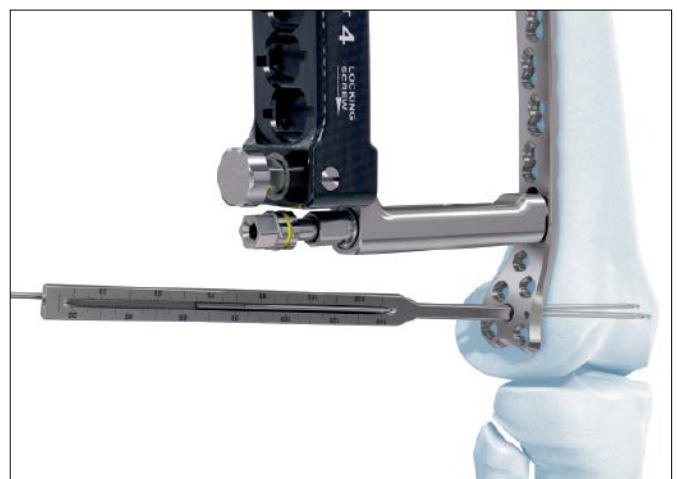


2 Measure for screw length

Instrument

03.231.017 Direct Measuring Device for cannulated VA Screws

Remove the 2.5 mm wire guide. Measure for screw length using the direct measuring device for 5.0 mm cannulated VA screws. For proper screw length measurement, the direct measuring device should be firmly placed into the plate hole. This will place the tip of the screw at the tip of the guide wire.



3

Insert screw

Instruments

03.231.013	6 Nm Torque Limiting Blue T-Handle, 6 mm hex coupling
03.231.016	Cannulated 4.0 mm Hex Screwdriver Shaft, 6 mm hex coupling
314.23	Cannulated 4.0 mm Hexagonal Screwdriver Shaft
338.49	Large Quick Coupling

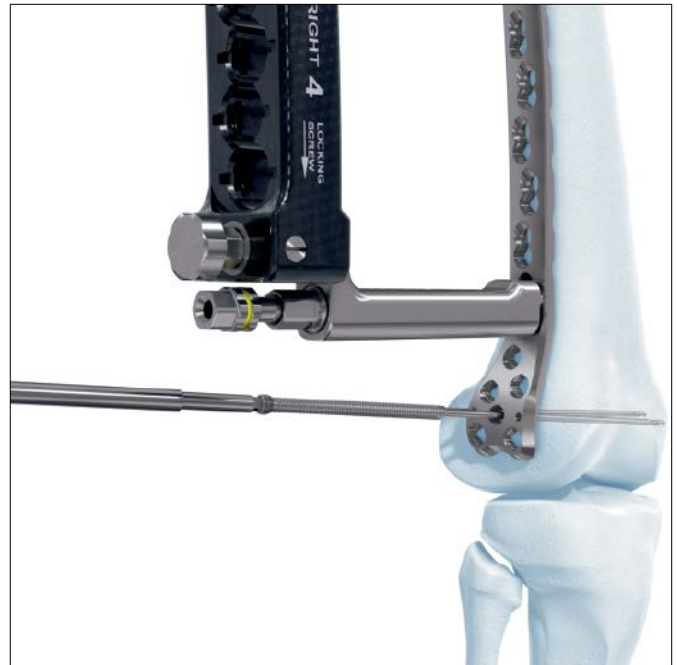
Insert the appropriate length 5.0 mm cannulated variable angle locking screw over the guide wire and into the bone. Remove the guide wire. The 5.0 mm cannulated variable angle locking screws may be inserted using power equipment and the cannulated 4.0 mm hexagonal screwdriver shaft and large quick coupling.

Important:

- **Confirm screw position and length prior to final tightening with the 6 Nm torque limiting handle.**
- **Final tightening must be done manually, using the 6 Nm torque limiting handle and cannulated 4.0 mm hex screwdriver shaft with 6 mm hex coupling. The 6 Nm torque limiting handle should not be used for screw removal.**

Optional technique: Using fixed-angle instruments

Alternatively, the percutaneous wire guide for 5.0 mm locking screws may be inserted into the central head hole of the plate and the 2.5 mm drill tip guide wire, 300 mm, can be inserted through the wire guide, parallel to the joint axis and the perpendicular to the anterior half of the lateral femoral condyle. Advance the guide wire through the wire guide until it reaches the medial wall of the femoral condyle. Follow Step 2, measure for screw length.



Notes:

- Although screws may be inserted in any order, it is usually advantageous to start with the central screw in order to ensure alignment.
- If required, lag screw reduction of a fragment must be accomplished before inserting locking screws in to the fragment. Lag screw reduction can be accomplished using a 5.0 mm cannulated conical screw,* or a 4.5 mm cortex screw, in the central hole of the plate head. For interfragment compression, 5.0 mm screw nuts can be used with 5.0 mm cannulated conical screws. Conical and cortex screws may be replaced with locking screws after reduction is complete.

Technique tip: The self-drilling, self-tapping flutes of the 5.0 mm cannulated variable angle screws make predrilling and pretapping unnecessary in most cases. In dense bone, the lateral cortex can be predrilled, if necessary.

* 5.0 mm cannulated conical screws can be found in the Periarticular Plating System and the 5.0 mm Cannulated Conical Screw Set.

INSERT SCREWS IN SURROUNDING PLATE HEAD HOLES

Option A: 5.0 mm Solid Variable Angle Screws

1

Drill

Instruments

03.231.008	4.3 mm Variable Angle Spherical Drill Guide, long, for 5.0 mm VA Locking Screws
324.213	4.3 mm Percutaneous Drill Bit, quick coupling, 300 mm, calibrated
395.911	Drill Sleeve Handle

For insertion of 5.0 mm solid variable angle screws into the variable angle locking holes that surround the central hole in the plate head, the 4.3 mm variable angle spherical drill guide should be used for off-axis drilling with the 4.3 mm drill bit. The 4.3 mm variable angle spherical drill guide should be inserted and threaded into the drill sleeve handle until tight.

For off-axis drilling, the spherical tip of the variable angle drill guide should be gently pressed into the variable angle hole to ensure the lip of the drill guide stops on the edge of the variable angle hole to prevent drilling beyond 15°. Insert the 4.3 mm drill bit through the drill guide, at the desired angle.

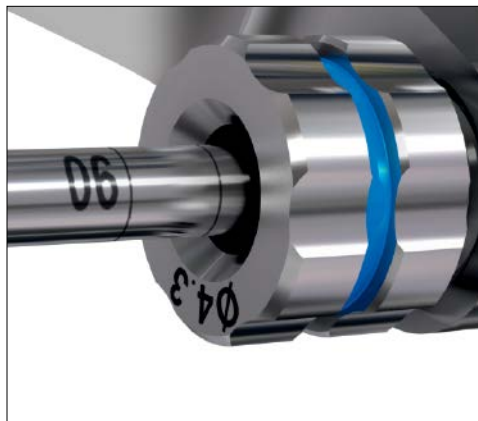


2

Measure for screw length

To measure for screw length, read off of the calibrated 4.3 mm drill bit.

Remove the drill bit and drill guide.



3

Insert screw

Instruments

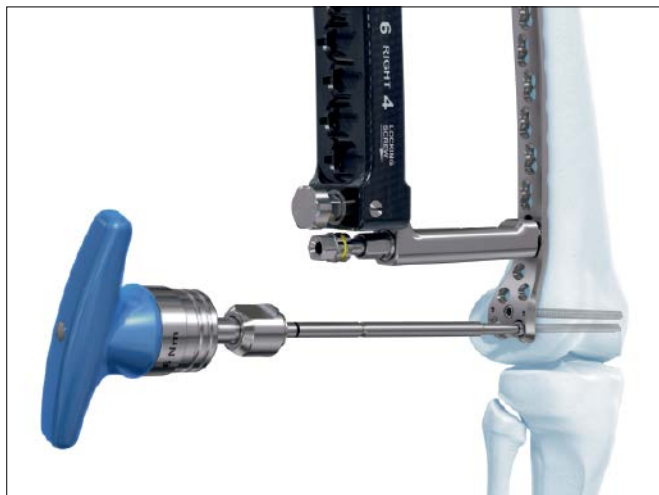
03.231.013	6 Nm Torque Limiting Blue T-Handle, 6 mm hex coupling
03.231.015	SD25 StarDrive Screwdriver Shaft, 6 mm hex coupling, 180 mm
314.119	StarDrive Screwdriver Shaft, T25, quick coupling

Insert the appropriate length variable angle screw.

The 5.0 mm variable angle locking screws may be inserted using power equipment and the SD25 StarDrive screwdriver shaft.

Important:

- **Confirm screw position and length prior to final tightening with the 6 Nm torque limiting handle.**
- **Final tightening must be done manually, using the 6 Nm torque limiting handle and SD25 StarDrive screwdriver shaft. The 6 Nm torque limiting handle should not be used for screw removal.**



Optional technique:

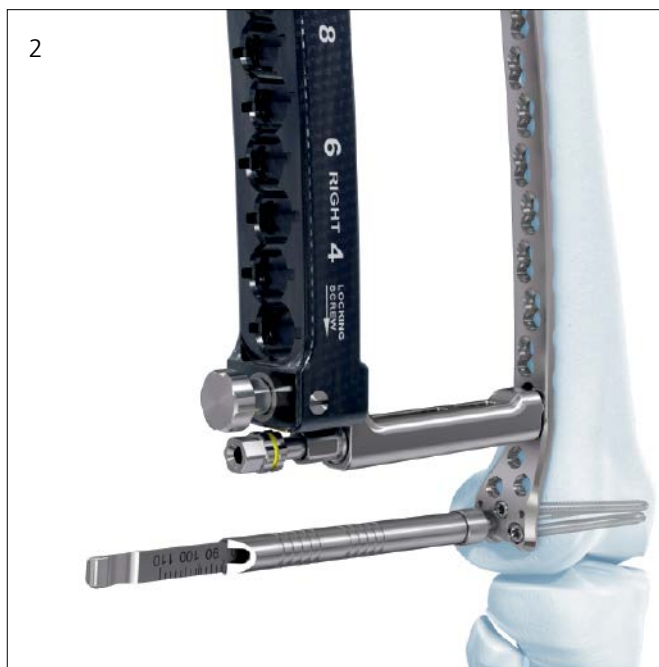
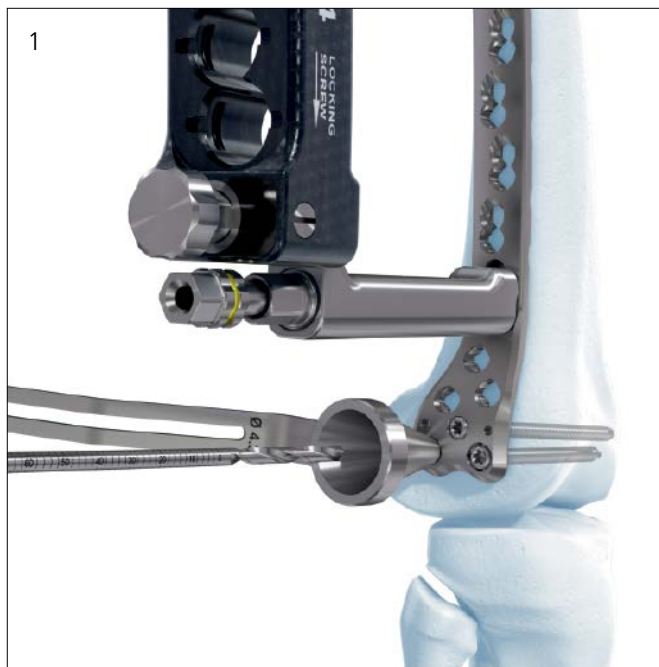
4.3 mm variable angle double drill guide with cone

Instruments

03.122.040	4.3 mm Variable Angle Double Drill Guide with Cone
310.431	4.3 mm Drill Bit, quick coupling, 180 mm
319.10	Depth Gauge, for large screws

The 4.3 mm variable angle drill guide with cone can also be used for off-axis drilling. Insert the 4.3 mm drill bit through the cone shaped end of the drill guide, at the desired angle (Figure 1), The drill guide inserts coaxially into the variable angle locking hole and the tip keys into the cloverleaf design of the hole.

Note: To measure for screw length, use the depth gauge for large screws. Due to the difference in the placement of the head of a locking screw compared to a cortex screw, care should be taken when determining screw length (Figure 2).



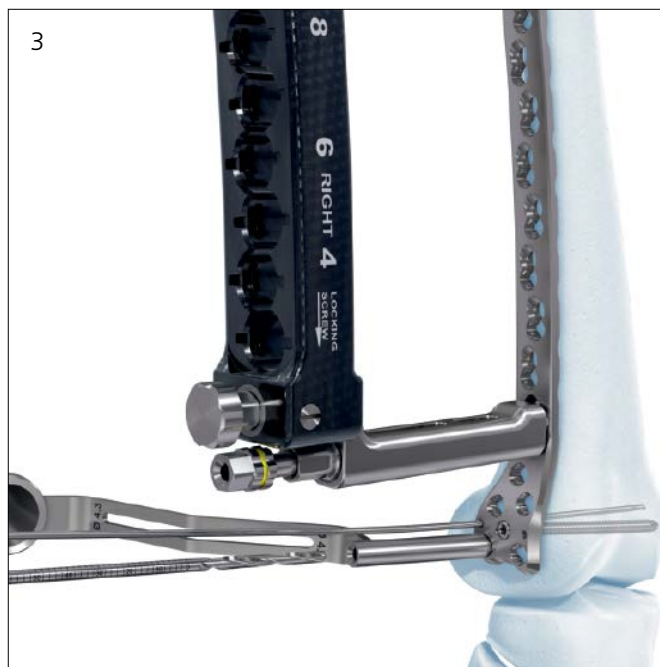
Insert Screws in Surrounding Plate Head Holes
Option A: 5.0 mm Solid Variable Angle Screws

The fixed-angle end of the drill guide ensures that the drill bit follows the normal trajectory of the locking hole. Insert the 4.3 mm drill bit, quick coupling, 180 mm, through the fixed angle end of the drill guide (Figure 3). To measure for screw length, read off of the calibrated drill bit (Figure 4).

Notes: When drilling, the tip of the drill guide should remain fully seated in the hole.

Threaded wire guides are not needed as the VA locking screwheads will lock into the variable angle screw holes up to 15° off the normal trajectory. However, if fixed angle insertion of a screw is desired, a threaded 4.3 mm drill guide should be used to align the drill bit to a normal trajectory.

The most posterior distal screw may be positioned distal to Blumensaat's line, requiring a unicondylar screw.



Option B: 5.0 mm Cannulated Variable Angle Screws

1

Drill

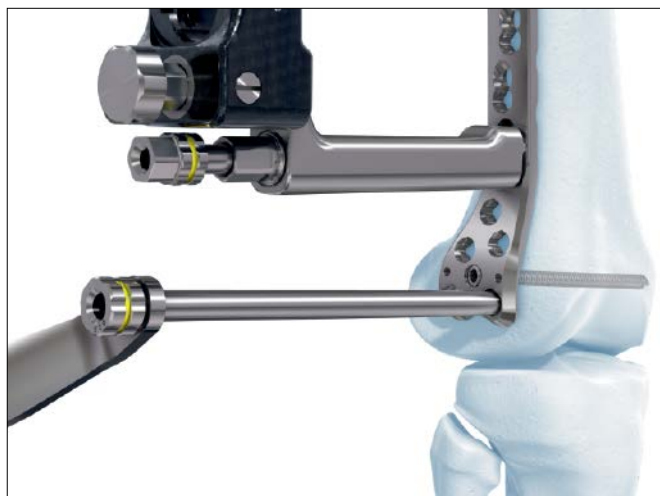
Instruments

03.120.026	2.5 mm Drill Tip Guide Wire, 300 mm
03.231.019	2.5 mm Variable Angle Spherical Wire Guide, long, for 5.0 mm VA Cannulated Locking Screws
395.911	Drill Sleeve Handle

For insertion of 5.0 mm cannulated variable angle screws into the variable angle locking holes surrounding the central hole in the plate head, the 2.5 mm variable angle spherical wire guide should be used for off-axis drilling of the 2.5 mm guide wires.

The 2.5 mm variable angle spherical wire guide should be inserted and threaded into the drill sleeve handle until tight.

For off-axis drilling, the spherical tip of the variable angle wire guide should be gently pressed into the variable angle hole to ensure the lip of the wire guide stops on the edge of the hole, to prevent drilling beyond 15°. Insert the guide wire through the wire guide at the desired angle.



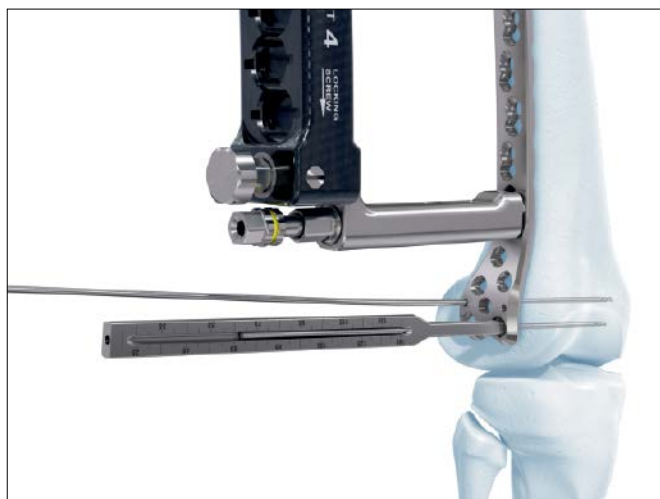
2

Measure for screw length

Instrument

03.231.017	Direct Measuring Device for 5.0 mm Cannulated VA Conical and Locking Screws
------------	---

Measure for screw length using the direct measuring device for 5.0 mm cannulated VA screws. For proper screw length measurement, the direct measuring device should be firmly placed into the plate hole. This will place the tip of the screw at the tip of the guide wire.



3
Insert screw

Instruments

03.231.013	6 Nm Torque Limiting Blue T-Handle, 6 mm hex coupling
03.231.016	Cannulated 4.0 mm Hex Screwdriver Shaft, 6 mm hex coupling, 180 mm
314.23	Cannulated 4.0 mm Hexagonal Screwdriver Shaft
338.49	Large Quick Coupling

Insert the appropriate length 5.0 mm cannulated variable angle locking screw over the guide wire and into the bone.

Remove the guide wire. The 5.0 mm cannulated variable angle locking screws may be inserted using power equipment with the cannulated 4.0 mm hexagonal screwdriver shaft and large quick coupling.

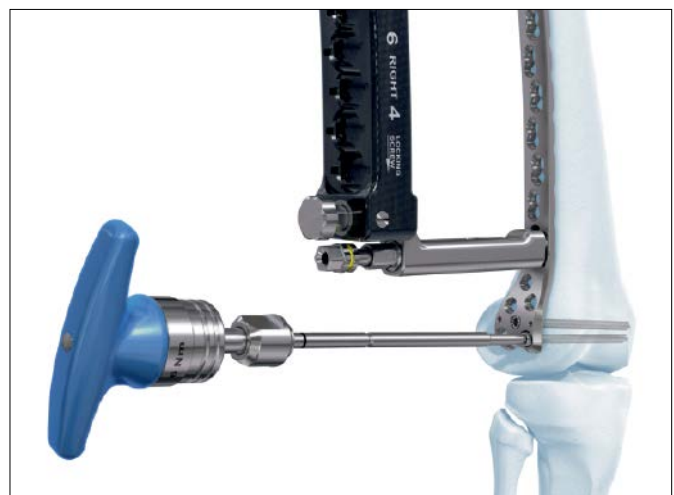
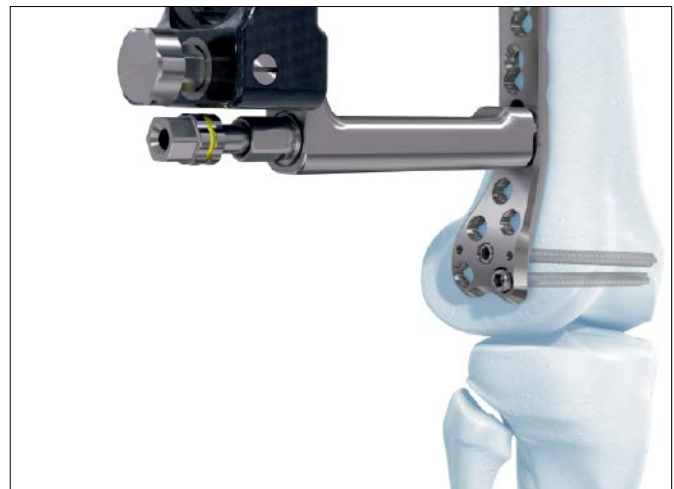
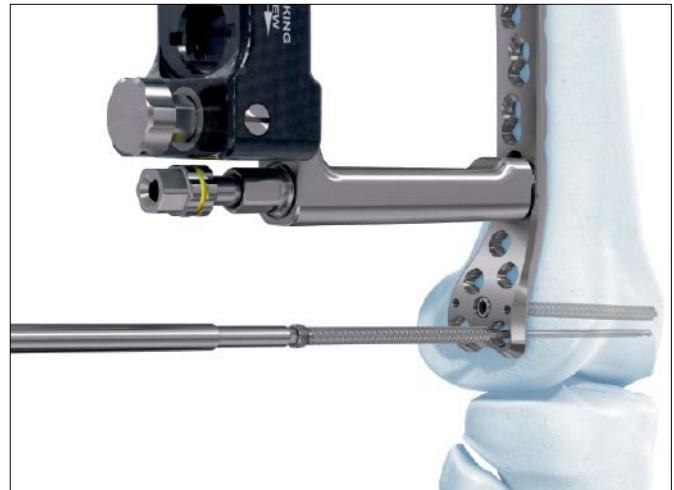
Important:

- **Confirm screw position and length prior to final tightening with the 6 Nm torque limiting handle.**
- **Final tightening must be done manually, using the 6 Nm torque limiting handle and SD25 StarDrive screwdriver shaft. The 6 Nm torque limiting handle should not be used for screw removal.**

Note: If a longer variable angle spherical wire guide is required, the long 2.5 mm VA spherical wire may be used with the drill sleeve handle and the technique outlined above.

Threaded wire guides are not needed as the VA cannulated locking screwheads will lock into the variable angle screw holes at up to 15° off the normal trajectory. If fixed angle insertion of a screw is desired, a threaded 2.5 mm wire guide should be used to precisely align the guide wire to a normal trajectory.

The most posterior distal screw may be positioned distal to Blumensaat's line, requiring a unicondylar screw.



INSERT SCREWS IN PLATE SHAFT

Option A: 4.5 mm Cortex Screws

1

Insert trocar assembly

Instruments

03.120.015	Trocar with Handle
03.120.017	Neutral Drill Guide, for 4.5 mm cortex screws
03.231.007	Locking/Neutral Guide for 4.5 mm VA-LCP Curved Condylar Plate Aiming arm

Choose an aiming arm hole and make an appropriate incision through it.

Assemble a trocar with handle and locking/neutral guide, as described in the Insert Plate section.

Orient the arrow on the locking neutral guide in the direction of the "CORTEX" arrow on the aiming arm. Use the assembled trocar guide to stab down to the plate through the aiming arm hole and incision.

Push the assembly completely down until it snaps into the self-retaining feature of the aiming arm.

Remove the trocar by depressing the release mechanism and pulling it away from the locking/neutral guide.



2
Drill and determine screw length

Instruments

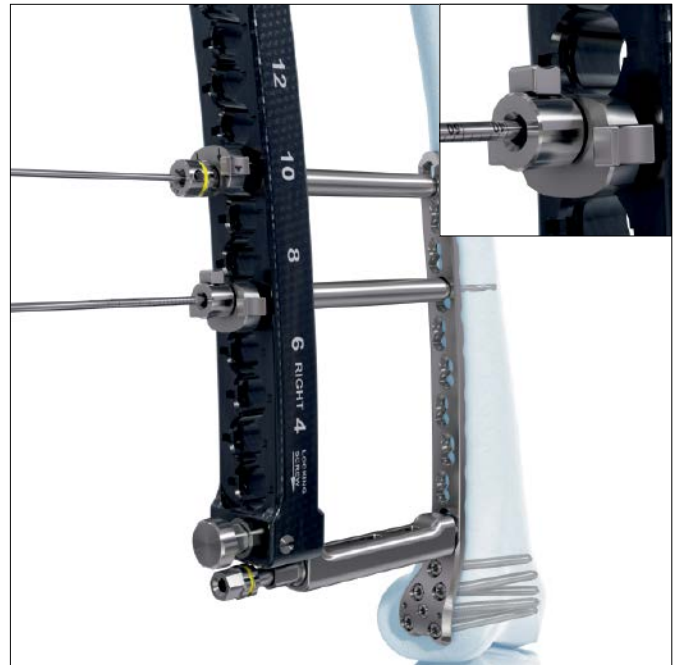
324.208	Percutaneous Direct Measuring device
324.212	3.2 mm Percutaneous Drill Bit, quick coupling, 300 mm, calibrated

Insert the neutral drill guide into the locking/neutral guide, while aligning the self-retaining features, until it snaps into place.

Use the 3.2 mm percutaneous drill bit to drill and determine screw length from the drill bit calibration aligned with the top of the drill guide.

Alternative technique

Place the percutaneous direct measuring device over the drill bit and against the end of the drill guide. Determine screw length from the end of the drill bit.



3
Insert screws

Instruments

03.120.150	Star/HexDrive Screwdriver T25/3.5 mm hex
03.120.151	Star/HexDrive Screwdriver Shaft, T25/3.5 mm hex

Remove the drill bit and drill guide and insert the cortex screw using the Star/HexDrive screwdriver. Repeat this process to insert as many 4.5 mm cortex screws as necessary into the plate shaft.

Optional technique:

Optional Instrument

03.231.002	Stopper for 4.5 mm VA-LCP Curved Condylar Plate Aiming Arms, 6 ea.
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Mark each screw location in the aiming arm, using a stopper for reference, as screw insertion proceeds.

Important: All 4.5 mm cortex screws must be inserted and tightened before insertion of locking screws.



Option B: 5.0 mm Solid Variable Angle Locking Screws

1

Make incision and insert drill guide

Instruments

03.231.008	4.3 mm Variable Angle Spherical Drill Guide, long, for 5.0 mm VA Locking Screws
03.231.009	Trocar for 4.3 mm VA Drill Guide, long
03.231.010	Protection Sleeve for 4.3 mm VA Drill Guide, long

Choose an aiming arm hole and make an incision through it. For off-axis insertion of the 5.0 mm solid variable angle locking screws, insert the 4.3 mm variable angle spherical drill guide into the protection sleeve for 4.3 mm variable angle drill guide. Insert the trocar for the 4.3 mm variable angle drill guide into the 4.3 mm variable angle spherical drill guide. Insert the trocar/drill guide/protection sleeve assembly to the plate through the previously created incision.

Depending upon the desired angle, the trocar/drill guide/protection sleeve assembly can be placed through the aiming arm hole, or it can be placed outside of the aiming arm.

The spherical tip of the variable angle drill guide should be gently pressed into the variable angle hole to ensure the lip of the drill guide stops on the edge of the variable angle hole to prevent drilling beyond 15°.

Remove the trocar from the assembly.



2

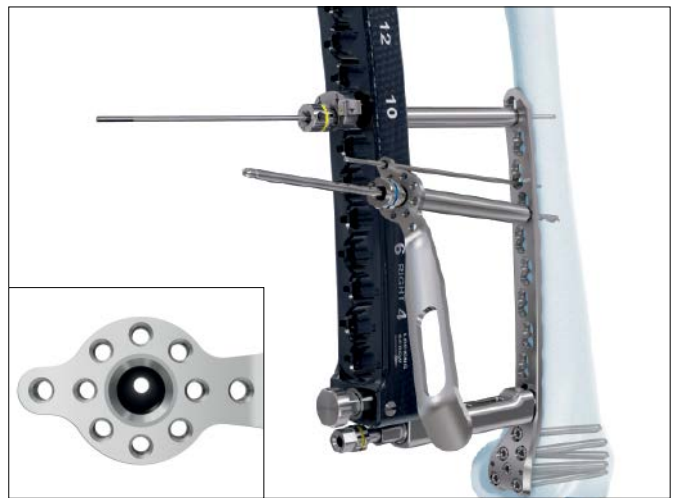
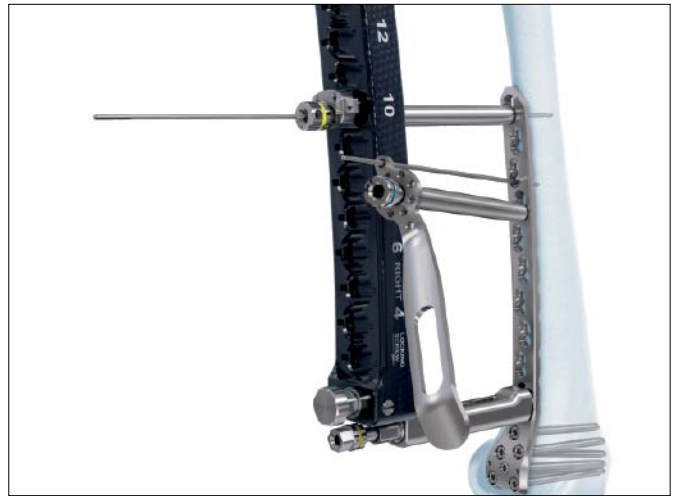
Insert guide wire

Instrument

03.120.026 2.5 mm Drill Tip Guide Wire, 300 mm

Find the desired angle and insert a 2.5 mm guide wire into one of the wire holes around the central hole of the protection sleeve. The variable angle drill guide and protection sleeve assembly is now provisionally fixed at the desired angle. Depending on the guide wire location, the wire may need to be cut to allow room for drilling.

Note: If the guide wire is inserted into one of the two outside holes, there is no need to cut the wire before drilling. If the guide wire is inserted into one of the immediate holes around the drill guide then the wire must be cut to allow room for the drill bit.



3

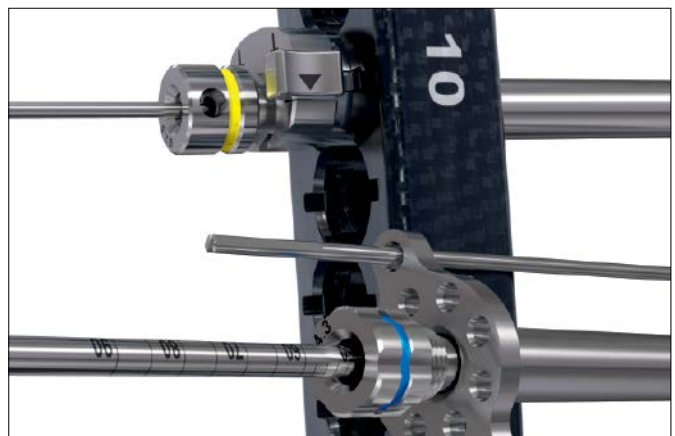
Drill and determine screw length

Instrument

324.213 4.3 mm Percutaneous Drill Bit, quick coupling, 300 mm, calibrated

Insert the 4.3 mm percutaneous drill bit through the 4.3 mm variable angle drill guide and drill to the desired depth.

Determine screw length from the drill bit calibration at the top of the drill guide.



4

Insert screw

Instruments

03.231.013	6 Nm Torque Limiting Blue T-Handle, 6 mm hex coupling
03.231.015	SD25 StarDrive Screwdriver Shaft, 6 mm hex coupling
314.118	StarDrive Screwdriver, T25

Remove the drill bit and drill guide and insert the appropriate 5.0 mm variable angle screw through the protection sleeve.

Note: For initial insertion of 5.0 mm solid variable angle locking screws, it is recommended to use the T25 StarDrive screwdriver.

Important:

- Confirm screw position and length prior to final tightening with the 6 Nm torque limiting handle.
- Final tightening must be done manually, using the 6 Nm torque limiting handle and SD25 StarDrive screwdriver shaft. The 6 Nm torque limiting handle should not be used for screw removal.



Option C: 5.0 mm Cannulated Variable Angle Locking Screws

1

Make incision and insert wire guide

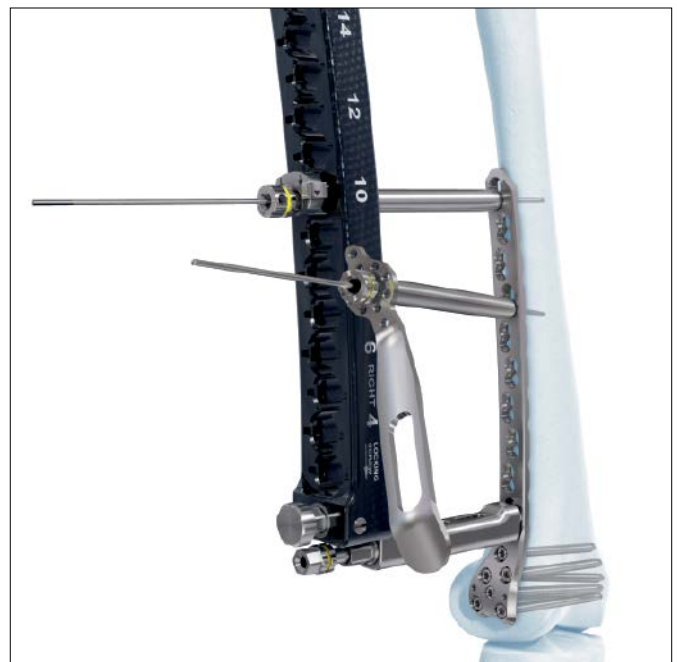
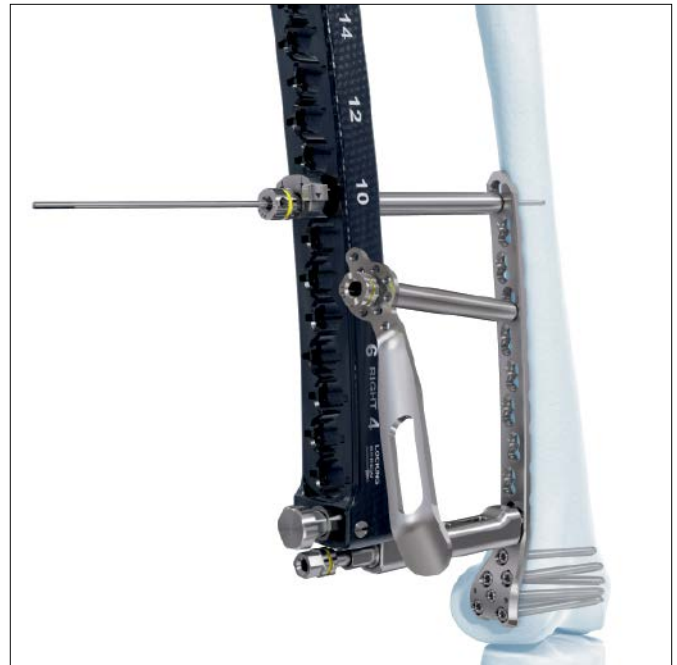
Instruments

03.231.007	Locking/Neutral Guide for 4.5 mm VA-LCP Curved Condylar Plate Aiming Arm
03.231.010	Protection Sleeve for 4.3 mm VA Drill Guide, long
03.231.019	2.5 mm Variable Angle Spherical Wire Guide, long, for 5.0 mm VA Cannulated Screws
03.120.026	2.5 mm Drill Tip Guide Wire, 300 mm

Choose an aiming arm hole and make an incision through it. For off-axis insertion of 5.0 mm cannulated variable angle locking screws, insert the 2.5 mm variable angle spherical wire guide into the protection sleeve for 4.3 mm variable angle drill guide.

Depending upon the desired angle, the wire guide/protection sleeve assembly can be placed through the aiming arm hole or outside of the aiming arm.

The spherical tip of the variable angle wire guide should be gently pressed into the variable angle hole to ensure the lip of the wire guide stops on the edge of the hole, to prevent drilling beyond 15°.



2
Insert guide wire and determine screw length

Instrument

324.208 Percutaneous Direct Measuring Device

Insert the guide wire through the wire guide at the desired angle. Place the percutaneous direct measuring device over the guide wire and against the end of the wire guide. Determine screw length.

Remove the wire guide.



3

Insert screw

Instrument

03.231.013	6 Nm Torque Limiting Blue T-Handle, 6 mm hex coupling
03.231.016	Cannulated 4.0 mm Hex Screwdriver Shaft, 6 mm hex coupling
314.23	Cannulated 4.0 mm Hexagonal Screwdriver Shaft
338.49	Large Quick Coupling

Insert the appropriate length 5.0 mm cannulated variable angle locking screw over the guide wire and into the bone. Remove the guide wire.

The 5.0 mm cannulated variable angle locking screws may be inserted using power equipment and the cannulated 4.0 mm hexagonal screwdriver shaft and large quick coupling.

Important:

- **Confirm screw position and length prior to final tightening with the 6 Nm torque limiting handle.**
- **Final tightening must be done manually, using the 6 Nm torque limiting handle and cannulated 4.0 mm hex screwdriver shaft with 6 mm hex coupling. The 6 Nm torque limiting handle should not be used for screw removal.**

Optional instrument

310.634	4.3 mm Cannulated Drill Bit, for 5.0 mm Screws
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Note: The self-drilling, self-tapping flutes of the 5.0 mm screws make predrilling and pretapping unnecessary in most cases. In dense bone, both cortices can be predrilled, if necessary.



REMOVE INSTRUMENTS

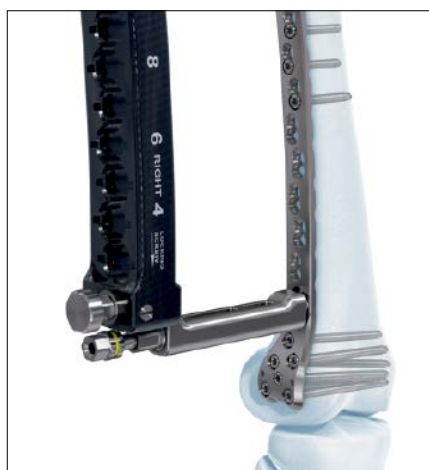
1

Remove locking/neutral guides

2

Remove aiming arm

Turn the connecting bolt on the aiming arm counterclockwise to loosen and remove the aiming arm from the insertion handle.



3

Remove insertion handle

Instrument

321.16	Combination Wrench, 11 mm width across flats
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Use the combination wrench to loosen the nut for the interconnecting bolt for the insertion handle and remove the interconnecting bolt.

If desired, insert an appropriate screw into the first Combi hole in the plate shaft.

Note: This hole is often located immediately adjacent to or in the fracture zone. Because of this, it has the potential to maximize stress concentration in the implant and adversely affect strain in the fracture gap. With most fracture patterns in this region, it is preferable to leave this hole unfilled.



IMPLANTS

4.5 mm Variable Angle LCP Curved Condylar Plates

Stainless Steel	Holes	Length (mm)	
02.124.406	6	159	right
02.124.407	6	159	left
02.124.408	8	195	right
02.124.409	8	195	left
02.124.410	10	230	right
02.124.411	10	230	left
02.124.412	12	266	right
02.124.413	12	266	left
02.124.414	14	301	right
02.124.415	14	301	left
02.124.416	16	336	right
02.124.417	16	336	left
02.124.418	18	370	right
02.124.419	18	370	left

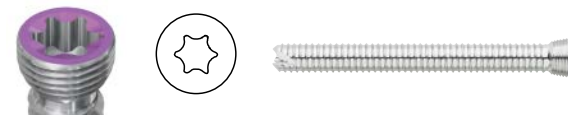
For additional implant options, see the Also Available section.

SCREWS USED WITH THE 4.5 MM VA-LCP CURVED CONDYLAR PLATES

5.0 mm Variable Angle Locking Screw

May be used in the fixed-angle central plate head hole and all variable angle locking holes, including the locking portion of the Combi holes.

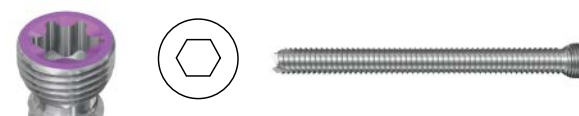
- Threaded rounded head
- Self-tapping tip
- Stainless steel



5.0 mm Cannulated Variable Angle Locking Screw

May be used in the fixed-angle central plate head hole and all variable angle locking holes, including the locking portion of the Combi holes.

- Threaded rounded head
- Self-drilling tip
- Stainless steel



5.0 mm Periprosthetic Variable Angle Locking Screw

May be used in the fixed-angle central plate head hole and all variable angle locking holes, including the locking portion of the Combi holes.

- Threaded rounded head
- Self-tapping flutes
- Blunt tip allows unicortical fixation of fractures when a previously placed implant is present
- Stainless steel



4.5 mm Cortex Screw

May be used in the DCU portion of Combi holes and the central plate head hole, to compress the plate to the bone or create axial compression.

- Self-tapping tip
- Stainless steel



The following existing locking screws are compatible with the 4.5 mm VA-LCP Curved Condylar Plate:

- 5.0 mm Cannulated Conical Screws*
- 5.0 mm Cannulated Locking Screws**
- 5.0 mm Locking Screws**
- 4.0 mm Locking Screws**
- 5.0 mm Periprosthetic Locking Screws**
- 5.0 mm Dynamic Locking Screws***

Screws manufactured from implant-quality 316L stainless steel.

* The 5.0 mm Cannulated Conical Screws can only be used in the fixed-angle central plate head hole and cannot be used in the variable angle locking holes

** The 4.0 mm and 5.0 mm LCP Screws can only be used at 0°/on-axis of the screw hole. It is recommended to use the available guiding tools to assist with insertion at zero degrees.

*** **Important:** The 5.0 mm Dynamic Locking Screws should be inserted at zero degrees and tightened with the 4.0 Nm TLA and handle. Please consult the *Synthes Dynamic Locking Screw (DLS) Technique Guide (J10966)* for additional information.

INSTRUMENTS

03.231.001 Insertion Handle for 4.5 mm VA-LCP Curved Condylar Plate



03.231.002 Stopper for 4.5 mm VA-LCP Curved Condylar Plate Aiming Arms



03.231.003 Aiming Arm for 4.5 mm VA-LCP Curved Condylar Plate, left



03.231.004 Aiming Arm for 4.5 mm VA-LCP Curved Condylar Plate, right



03.231.005 Interlocking Bolt for 4.5 mm VA-LCP Curved Condylar Plate Insertion Handle



03.231.006 Nut for Interlocking Bolt for 4.5 mm VA-LCP Curved Condylar Plate Insertion Handle



03.231.007 Locking/Neutral Guide for 4.5 mm VA-LCP Curved Condylar Plate Aiming Arm



03.231.008 4.3 mm Variable Angle Spherical Drill Guide, long, for 5.0 mm VA Locking Screws



03.231.009 Trocar for 4.3 mm VA Drill Guide, long



03.231.010 Protection Sleeve for 4.3 mm VA Drill Guide, long



03.231.013 6 Nm Torque Limiting Blue T-Handle, 6 mm hex coupling*



03.231.015 SD25 StarDrive Screwdriver Shaft, 6 mm hex coupling, 180 mm



03.231.016 Cannulated 4.0 mm Hex Screwdriver Shaft, 6 mm hex coupling, 180 mm



03.231.017 Direct Measuring Device for 5.0 mm Cannulated VA Screws



03.231.019 2.5 mm Variable Angle Spherical Wire Guide, long, for 5.0 mm VA Cannulated Screws



Also Available

03.231.018 6 Nm Torque Limiting Blue Handle, with 6 mm hex coupling*



* For recalibration of the Torque Limiting Handles (03.231.013 and 03.231.018): Synthes recommends annual servicing and inspection by the original manufacturer. The Torque Limiting Handle should be sent to your Synthes repair center annually for calibration. The user accepts the responsibility for this annual calibration.

4.5 MM VARIABLE ANGLE LCP CURVED CONDYLAR PLATE SET

Stainless Steel (01.231.015)

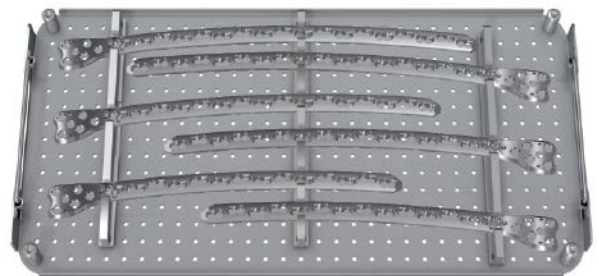
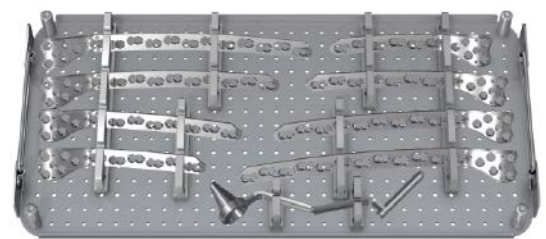
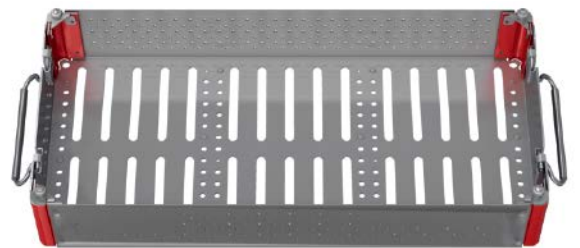
Graphic Case

61.231.015 Graphic Case for 4.5 mm Variable Angle LCP Curved Condylar Plate Set

Implants

4.5 mm Variable Angle LCP Curved Condylar Plates

Stainless Steel	Holes	Length (mm)	
02.124.406	6	159	right
02.124.407	6	159	left
02.124.408	8	195	right
02.124.409	8	195	left
02.124.410	10	230	right
02.124.411	10	230	left
02.124.412	12	266	right
02.124.413	12	266	left
02.124.414	14	301	right
02.124.415	14	301	left
02.124.416	16	336	right
02.124.417	16	336	left
02.124.418	18	370	right
02.124.419	18	370	left



Shown with 03.122.040 (not included)

For additional implant options, see the Also Available section.

Optional Instrument

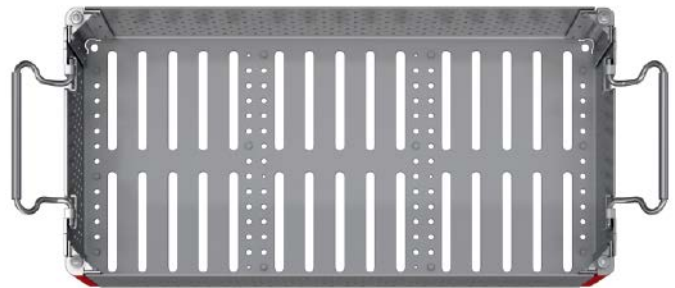
03.122.040 4.3 mm Variable Angle Double Drill Guide with Cone

For detailed cleaning and sterilization instructions, please refer to:
www.synthes.com/cleaning-sterilization
 In Canada, the cleaning and sterilization instructions will be provided with the Loaner shipments.

4.5 MM VA-LCP CURVED CONDYLAR AIMING INSTRUMENT SET (01.231.016)

Graphic Case

61.231.016 Graphic Case for 4.5 mm Variable Angle LCP Curved Condylar Aiming Instrument Set



Instruments

03.010.151 Star/HexDrive Screwdriver Shaft, T25/3.5 mm hex

03.120.015 Trocar with Handle

03.120.016 Scalpel Handle

03.120.017 Neutral Drill Guide, for 4.5 mm cortex screws, 2 ea.

03.120.022 Handle for Percutaneous Threaded Drill Guides, 2 ea.

03.120.023 Pull Reduction Device for 4.3 mm Percutaneous Threaded Drill Guide, 2 ea.

03.120.026 2.5 mm Drill Tip Guide Wire, 300 mm, 8 ea.

03.231.001 Insertion Handle for 4.5 mm VA-LCP Curved Condylar Plate

03.231.002 Stopper for 4.5 mm VA-LCP Curved Condylar Plate Aiming Arms, 6 ea.

03.231.003 Aiming Arm for 4.5 mm VA-LCP Curved Condylar Plate, left

03.231.004 Aiming Arm for 4.5 mm VA-LCP Curved Condylar Plate, right

03.231.005 Interlocking Bolt for 4.5 mm VA-LCP Curved Condylar Plate Insertion Handle, 2 ea.

03.231.006 Nut for Interlocking Bolt for 4.5 mm VA-LCP Curved Condylar Plate Insertion Handle, 2 ea.

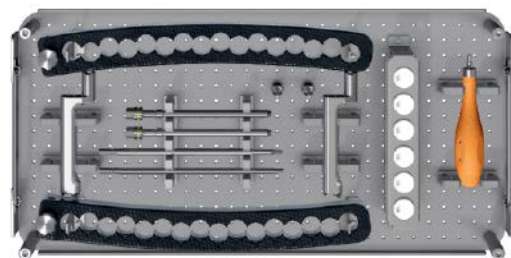
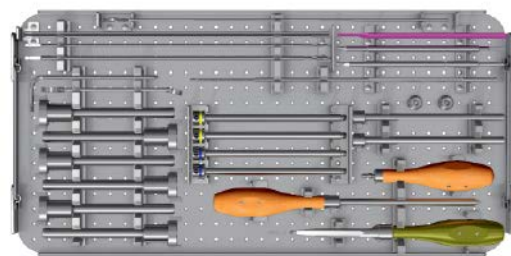
03.231.007 Locking/Neutral Guide for 4.5 mm VA-LCP Curved Condylar Plate Aiming Arm, self-retaining, 6 ea.

314.119 StarDrive Screwdriver Shaft, T25, quick coupling

319.461 2.5 mm Cleaning Stylet

321.16 Combination Wrench, 11 mm width across flats

324.203 4.3 mm Percutaneous Threaded Drill Guide, 4 ea.



324.208 Percutaneous Direct Measuring Device

324.212 3.2 mm Percutaneous Drill Bit, quick coupling, 300 mm, calibrated, 2 ea.

324.213 4.3 mm Percutaneous Drill Bit, quick coupling, 300 mm, calibrated, 2 ea.

324.215 2.5 mm Percutaneous Wire Guide for 5.0 mm Locking Screws, 4 ea.

Also Available Instruments

03.120.029 4.0 Hexagonal Key

03.231.015 SD25 StarDrive hex coupling 180 mm

03.231.016 Cannulated 4.0 Hex Screwdriver Shaft, 6 mm, hex coupling, 180 mm

4.5 MM VA-LCP INSTRUMENT AND SCREW SET

Stainless Steel (01.231.017)

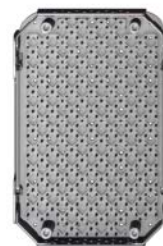
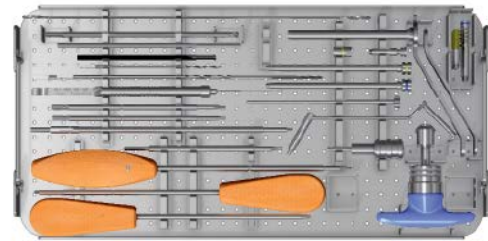
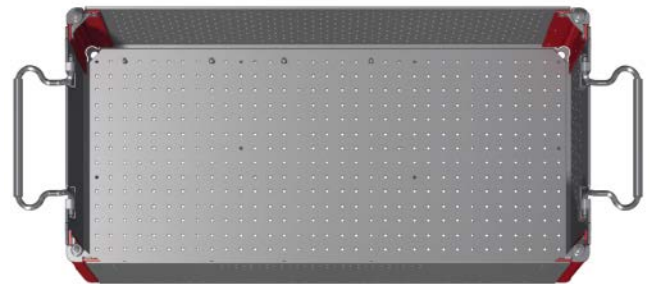
Graphic Case

- 61.231.017 Graphic Case for 4.5 mm Variable Angle LCP Instrument and Screw Set
- 61.116.106 4.5 mm Screw Rack Block for Screw Rack Shell for Modular Graphic Case System, 2 ea.
- 61.116.107 5.0 mm Screw Rack Block for Screw Rack Shell for Modular Graphic Case System, 3 ea.
- 61.116.111 5.0 mm Periprosthetic Screw Rack Block for Screw Rack Shell

Length Marker Push Pins

	Length (mm)		Length (mm)
60.116.310	10	60.116.346	46
60.116.312	12	60.116.348	48
60.116.314	14	60.116.350	50
60.116.316	16	60.116.352	52
60.116.318	18	60.116.354	54
60.116.320	20	60.116.355	55
60.116.322	22	60.116.356	56
60.116.324	24	60.116.358	58
60.116.325	25	60.116.360	60
60.116.326	26	60.116.362	62
60.116.328	28	60.116.364	64
60.116.330	30	60.116.365	65
60.116.332	32	60.116.366	66
60.116.334	34	60.116.368	68
60.116.335	35	60.116.370	70
60.116.336	36	60.116.375	75
60.116.338	38	60.116.380	80
60.116.340	40	60.116.385	85
60.116.342	42	60.116.390	90
60.116.344	44		
60.116.345	45		

- 60.116.507 Screw Type Push Pin, Cortex
- 60.116.521 Screw Type Push Pin, VA Locking
- 60.116.523 Screw Type Push Pin, Cannulated VA Locking
- 60.116.560 Label Pack for 4.5 mm Screws and Instruments
- 60.116.561 Label Pack for 5.0 mm Screws and Instruments
- 68.000.119 Unlocking Tool for Screw Rack Shell



Instruments

03.010.150	Star/HexDrive Screwdriver, T25/3.5 mm hex	312.449	4.3 mm Threaded Drill Guide, for 5.0 mm locking screws, 2 each
03.010.151	Star/HexDrive Screwdriver Shaft, T25/3.5 mm hex	312.48	4.5 mm/3.2 mm Insert Drill Sleeve
03.231.008	4.3 mm Variable Angle Spherical Drill Guide, long, for 5.0 mm VA Locking Screws	314.05	Cannulated 4.0 mm Hexagonal Screwdriver
03.231.009	Trocar for 4.3 mm VA Drill Guide, long	314.11	Holding Sleeve
03.231.010	Protection Sleeve for 4.3 mm VA Drill Guide, long	314.118	StarDrive Screwdriver, T25
03.231.013	6 Nm Torque Limiting Blue T-Handle, 6 mm hex coupling	314.23	Cannulated 4.0 mm Hexagonal Screwdriver Shaft
03.231.015	SD25 StarDrive Screwdriver Shaft, 6 mm hex coupling, 180 mm	314.281	Holding Sleeve, for Large Fragment Locking and Variable Angle Screws
03.231.016	Cannulated 4.0 mm Hex Screwdriver Shaft, 6 mm hex coupling, 180 mm	319.10	Depth Gauge, for large screws
03.231.017	Direct Measuring Device, for 5.0 mm Cannulated VA Conical and Locking Screws	319.24	2.9 mm Cleaning Brush
03.231.019	2.5 mm Variable Angle Spherical Wire Guide, Long, for 5.0 mm VA Cannulated Screws	319.461	2.5 mm Cleaning Stylet
292.652	2.0 mm Non-colored Threaded Guide Wire, spade point, 230 mm, 10 ea.	321.12	Articulated Tension Device
310.243	2.5 mm Drill Tip Guide Wire, 200 mm, 10 ea.	321.16	Combination Wrench, 11 mm width across flats
310.31	3.2 mm Drill Bit, 145 mm, quick coupling	323.46	4.5 mm Universal Drill Guide
310.431	4.3 mm Drill Bit, 180 mm, quick coupling	324.174	2.5 mm Wire Guide for 5.0 mm Screws, 4 ea.
310.44	4.5 mm Drill Bit, 145 mm, quick coupling	324.213	4.3 mm Percutaneous Drill Bit, quick coupling, 300 mm, calibrated
310.632	5.0 mm Cannulated Drill Bit, quick coupling, 200 mm	338.49	Large Quick Coupling
310.634	4.3 mm Cannulated Drill Bit, quick coupling, 200 mm	395.911	Drill Sleeve Handle
310.99	Countersink, for 4.5 mm and 6.5 mm screws		
311.449	Push-Pull Reduction Device, for use with 4.5 mm LCP plates, 2 ea.		
311.46	Tap, for 4.5 mm screws		

Also Available Instruments

311.431	Large Handle with Quick Coupling
311.66	Tap for 6.5 mm Cannulated Bone Screws
312.67	6.5 mm/3.2 mm Double Drill Sleeve
319.701	Cannulated Screw Measuring Device

4.5 mm VA-LCP Instrument and Screw Set
Stainless Steel (01.231.017)

Implants

222.578 5.0 mm Screw Nut, 2 ea.
219.99 Washer, 6 ea.

5.0 mm Periprosthetic Variable Angle Locking Screws,
self-tapping, StarDrive 25

Stainless Steel	Length (mm)	Qty.
02.231.010	10	3
02.231.012	12	3
02.231.014	14	3
02.231.016	16	3
02.231.018	18	3

5.0 mm Variable Angle Locking Screws, self-tapping,
StarDrive 25

Stainless Steel	Length (mm)	Qty.
02.231.220	20	3
02.231.222	22	3
02.231.224	24	3
02.231.226	26	3
02.231.228	28	3
02.231.230	30	3
02.231.232	32	3
02.231.234	34	3
02.231.236	36	3
02.231.238	38	3
02.231.240	40	3
02.231.242	42	3
02.231.244	44	3
02.231.246	46	3
02.231.248	48	3
02.231.250	50	3
02.231.255	55	2
02.231.260	60	2
02.231.265	65	2
02.231.270	70	2
02.231.275	75	2
02.231.280	80	2
02.231.285	85	2
02.231.290	90	2

5.0 mm Cannulated Variable Angle Locking Screws,
3.5 mm Hex

Stainless Steel	Length (mm)	Qty.
02.231.620	20	2
02.231.625	25	2
02.231.630	30	2
02.231.635	35	2
02.231.640	40	2
02.231.645	45	2
02.231.650	50	2
02.231.655	55	3
02.231.660	60	3
02.231.665	65	3
02.231.670	70	3
02.231.675	75	3
02.231.680	80	3
02.231.685	85	3
02.231.690	90	2

4.5 mm VA-LCP Instrument and Screw Set
Stainless Steel (01.231.017)

4.5 mm Cortex Screws, self-tapping

Stainless Steel	Length (mm)	Qty.
214.822	22	3
214.824	24	3
214.826	26	3
214.828	28	3
214.830	30	3
214.832	32	3
214.834	34	3
214.836	36	6
214.838	38	6
214.840	40	6
214.842	42	6
214.844	44	3
214.846	46	3
214.848	48	3
214.850	50	3
214.852	52	2
214.854	54	2
214.856	56	2
214.858	58	2
214.860	60	2
214.862	62	2
214.864	64	2
214.866	66	2
214.868	68	2
214.870	70	2

ALSO AVAILABLE

4.5 mm Variable Angle LCP Curved Condylar Plates, sterile

Stainless Steel	Holes	Length (mm)	
02.124.406S	6	159	right
02.124.407S	6	159	left
02.124.408S	8	195	right
02.124.409S	8	195	left
02.124.410S	10	230	right
02.124.411S	10	230	left
02.124.412S	12	266	right
02.124.413S	12	266	left
02.124.414S	14	301	right
02.124.415S	14	301	left
02.124.416S	16	336	right
02.124.417S	16	336	left
02.124.418S	18	370	right
02.124.419S	18	370	left
02.124.420S	20	405	right
02.124.421S	20	405	left
02.124.422S	22	439	right
02.124.423S	22	439	left

5.0 mm Periprosthetic Variable Angle Locking Screws, self-tapping, sterile

Stainless Steel	Length (mm)
02.231.008S	8
02.231.010S	10
02.231.012S	12
02.231.014S	14
02.231.016S	16
02.231.018S	18

5.0 mm Variable Angle Locking Screws, self-tapping, StarDrive 25

Stainless Steel	Length (mm)
02.231.214	14
02.231.216	16
02.231.218	18

5.0 mm Variable Angle Locking Screws, self-tapping,
StarDrive 25, sterile

Stainless Steel	Length (mm)
02.231.295S	95
02.231.300S	100
02.231.305S	105
02.231.310S	110

5.0 mm Cannulated Variable Angle Locking Screws,
3.5 mm Hex, sterile

Stainless Steel	Length (mm)
02.231.695S	95
02.231.700S	100
02.231.705S	105
02.231.710S	110

- 60.116.112 Auxiliary Block for Screw Rack Shell
- 60.116.451 Length Marker Push Pin, Blank
- 60.116.452 Screw Type Push Pin, Blank

Optional Instruments

- 03.122.040 4.3 mm Variable Angle Double Drill Guide with Cone
- 03.231.015 SD25 StarDrive Screwdriver Shaft, 6 mm hex coupling, 180 mm
- 03.231.016 Cannulated 4.0 mm Hex Screwdriver Shaft, 6 mm hex coupling, 180 mm
- 311.431 Large Handle with quick coupling
- 311.66 Tap for 6.5 mm Cancellous Bone Screws
- 312.67 6.5 mm/3.2 mm Double Drill Sleeve



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