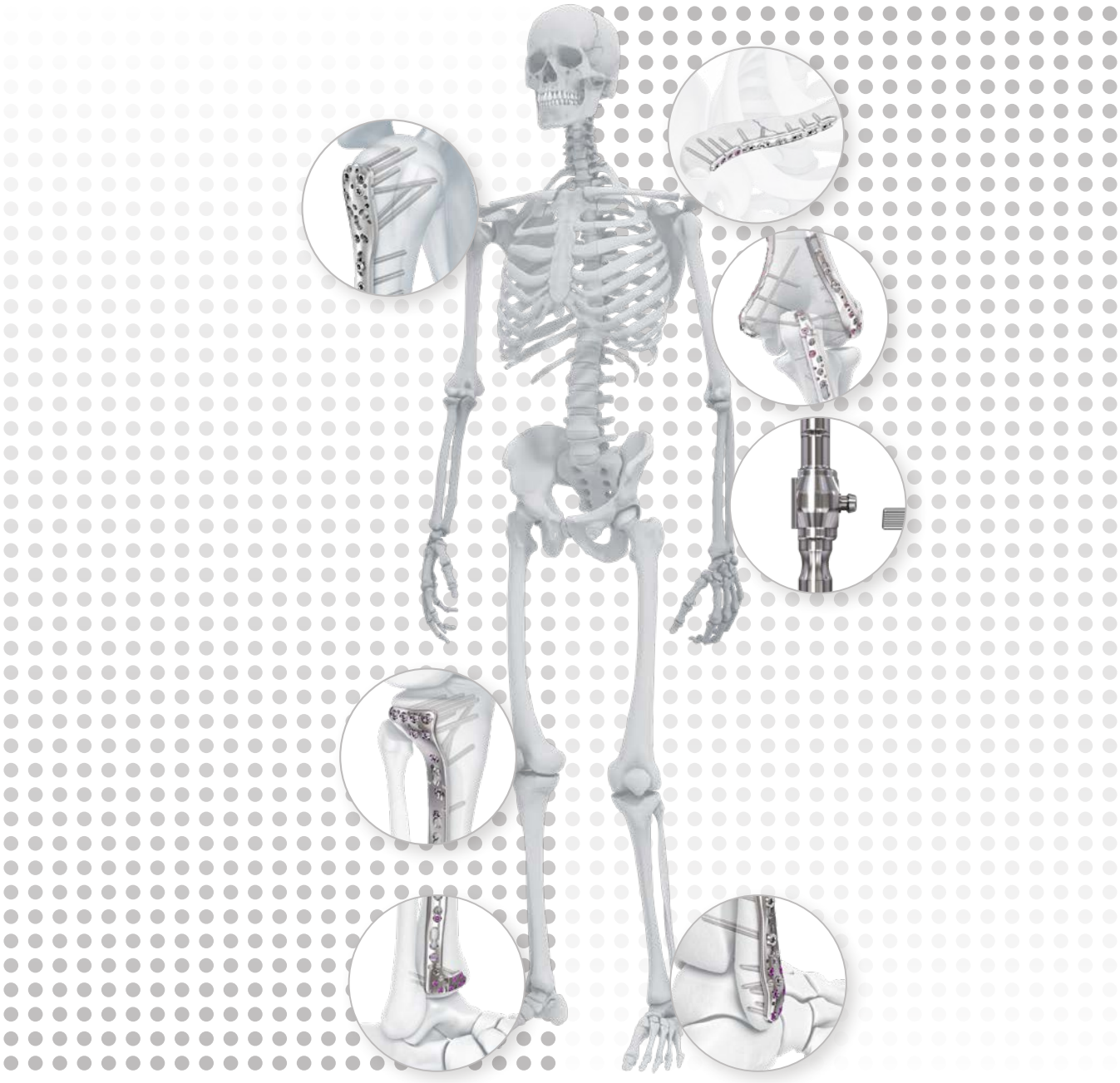
Universal Small Fragment System

Surgical Technique

2.7 mm/3.5 mm Non-locking, Locking, and Variable Angle Locking Technology



approved by AO Technical Commission

DePuy Synthes
THE ORTHOPAEDICS COMPANY OF Johnson & Johnson


Image intensifier control

This description alone does not provide sufficient background for direct use of DePuy Synthes products. Instruction by a surgeon experienced in handling these products is highly recommended.

Processing, Reprocessing, Care and Maintenance
For general guidelines, function control and dismantling of multi-part instruments, as well as processing guidelines for implants, please contact your local sales representative or refer to:
http://emea.depuysynthes.com/hcp/reprocessing-care-maintenance
For general information about reprocessing, care and maintenance of DePuy Synthes reusable devices, instrument trays and cases, as well as processing of DePuy Synthes non-sterile implants, please consult the Important Information leaflet (SE_023827) or refer to:
http://emea.depuysynthes.com/hcp/reprocessing-care-maintenance

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Universal Small Fragment System

Overview

The Universal Small Fragment System is a system of instruments, coupled with existing standard and anatomic implants to support small fragment procedures.
The system consists of two components: 1) A core set of instruments, screws, and standard implants; and 2) modular anatomic implant trays. In addition, the core set can support 2.7 mm/3.5 mm DePuy Synthes non-locking, LCP™, and VA LCP™ plating technologies. This system from DePuy Synthes allows 2.7 mm/3.5 mm implants to be supported with one core set of instruments.

The AO Principles of Fracture Management

Mission

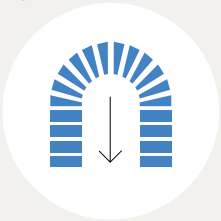
The AO's mission is promoting excellence in patient care and outcomes in trauma and musculoskeletal disorders.

AO Principles[1,2]

1.

Fracture reduction and fixation to restore anatomical relationships.

2.



Fracture fixation providing absolute or relative stability, as required by the "personality" of the fracture, the patient, and the injury.

3.

Preservation of the blood supply to soft-tissues and bone by gentle reduction techniques and careful handling.

4.

Early and safe mobilization and rehabilitation of the injured part and the patient as a whole.

[1] Müller ME, Allgöwer M, Schneider R, Willenegger H. Manual of Internal Fixation. 3rd ed. Berlin, Heidelberg New York: Springer 1991.
[2] Buckley RE, Moran CG, Apivatthakakul T. AO Principles of Fracture Management: 3rd ed. Vol. 1: Principles, Vol. 2: Specific fractures. Thieme; 2017.

Intended Use

For specific labelling information including indications, contraindications, warnings and precautions and MRI related information, refer to the corresponding surgical technique guides and instructions for use of the implants. For a listing of surgical techniques that may be serviced by this system, please refer to the Supported Plating Systems Section of this document.

The Surgical Technique section of this document
- Illustrates instruments
- Describes function of instruments
- Clarifies comparables for instruments

While instruments are being introduced with the Universal Small Fragment System, no changes have been made to the surgical technique of the plates for which they are used.

▲ Precautions:
- Instruments may have sharp edges or moving joints that may pinch or tear user's glove or skin.
- Handle devices with care and dispose of worn bone cutting instruments in an approved sharps container.
- When using sterile packed instruments, use proper operating room aseptic technique.

Surgical Preparation and Fracture Reduction

Instruments

03.133.202	Periosteal Elevator 6 mm Curved Blade	
292.120.01	1.25 mm Kirschner Wire with Trocar Point 150 mm	
292.160.01	1.6 mm Kirschner Wire with Trocar Point 150 mm	
292.200.01	2.0 mm Kirschner Wire with Trocar Point 150 mm	
319.391	Sharp Hook-Small Taper	
398.400	Reduction Forceps with Points Narrow-Ratchet 132 mm	
398.410	Reduction Forceps with Points Broad-Ratchet	
399.190	Small Hohmann Retractor 8 mm Short Narrow Tip 160 mm	
399.490	Hohmann Retractor 15 mm 160 mm	
399.990	Reduction Forceps with Serrated Jaw-Ratchet 144 mm	

Optional instrument

399.780	Reduction Forceps, large, with Points	

Patient positioning

Place patient based on anatomic location and desired surgical approach. Recommended positioning for the anatomical plates can be found in each respective anatomical plate surgical technique guides. A list of existing systems supported by the Universal Small Fragment System is available in the *Supported Plating Systems* section of this document.

Preparation of surgical site

The Periosteal Elevator (03.133.202) may be used to prepare the surgical site or clear the periosteum as needed and directed by the anatomic plate surgical technique guide.

▲ Precaution:

Do not strike the back of the Periosteal Elevator.

Fracture reduction

Reduce the fracture using necessary visualization with or without fluoroscopy. Provide fixation with K-wire or reduction forceps, as needed.

Alternative/Indirect fracture reduction

Reduce the fracture indirectly using the plate by means of non-locking screws (for lag screw technique: to generate inter-fragmentary compression, use cancellous bone or cortical bone screws).

Comparable instruments:

399.360

Implant Selection and Fit

Plate selection

Both anatomic and standard plates are available in various technology types and sizes. Use desired technique to determine proper plate type and size.

Plate Bending Irons

Instruments	
03.133.200	Plate Bending Iron Closed, for 2.7/3.5 mm Plates
03.133.201	Plate Bending Iron Open, for 2.7/3.5 mm Plates

Comparable instruments:

329.040

329.050

329.070

Plate contouring

Use the bending irons to contour the plates to the anatomy. The closed bending iron can be used to hold the plate during contouring. The open bending iron can be positioned at any location on the plate.

■ Note:

Refer to system specific surgical technique guides for warnings and precautions related to plate bending. A list of existing systems supported by the Universal Small Fragment System is available in the Supported Plating Systems section of this document.

In-plane bending

Out-of-plane and torsional bending

Plate positioning

Position the plate on the bone, and preliminarily fix it. If axial dynamic compression is used, ensure that the middle of the plate is over to the fracture line.

Secure plate to bone

Determine combination of screws to be used for fixation. If a combination of locking and cortex screws will be used, cortex screws should be inserted first to ensure that the plate has appropriate bone contact.

Screw Hole Preparation and Measurement

Screw insertion

Determine which screws are required for fixation. A combination of all those listed may be used; however a non-locking screw should be used first to pull the plate to the bone.

The Screw Reference Chart (right) is available on the Universal Small Fragment Screw Rack (60.133.150) to aid selecting proper instrumentation for respective screw types and sizes.

Screw Reference Chart

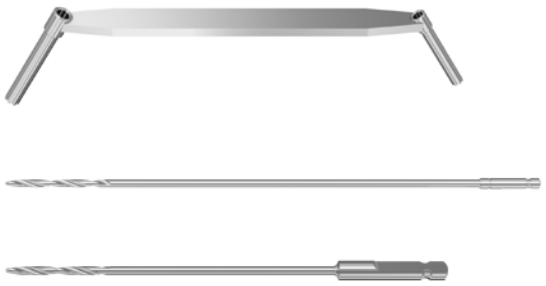
Screw Size (mm)	Screw Type	Drill Bit (mm)	Torque Limit (Nm)	Driver Options
2.7	Variable Angle Locking	2.0	1.2	T8
	Locking		0.8	T8
	Metaphyseal		1.2	T8
	Cortex		Do Not Use	T8 2.5 mm
	Lag Technique Cortex	❶ 2.7 ❷ 2.0	Do Not Use	T8 2.5 mm
3.5	Variable Angle Locking	2.8	2.5	T15
	Locking		1.5	T15
	Cortex	2.5	Do Not Use	T15 2.5 mm
	Lag Technique Cortex	❶ 3.5 ❷ 2.5	Do Not Use	T15 2.5 mm
4.0	Cancellous	2.5	Do Not Use	2.5 mm
	Cortex	2.9	Do Not Use	2.5 mm

2.7 mm, 3.5 mm and 4.0 mm Non-Locking Drill Guides and Drill Bits

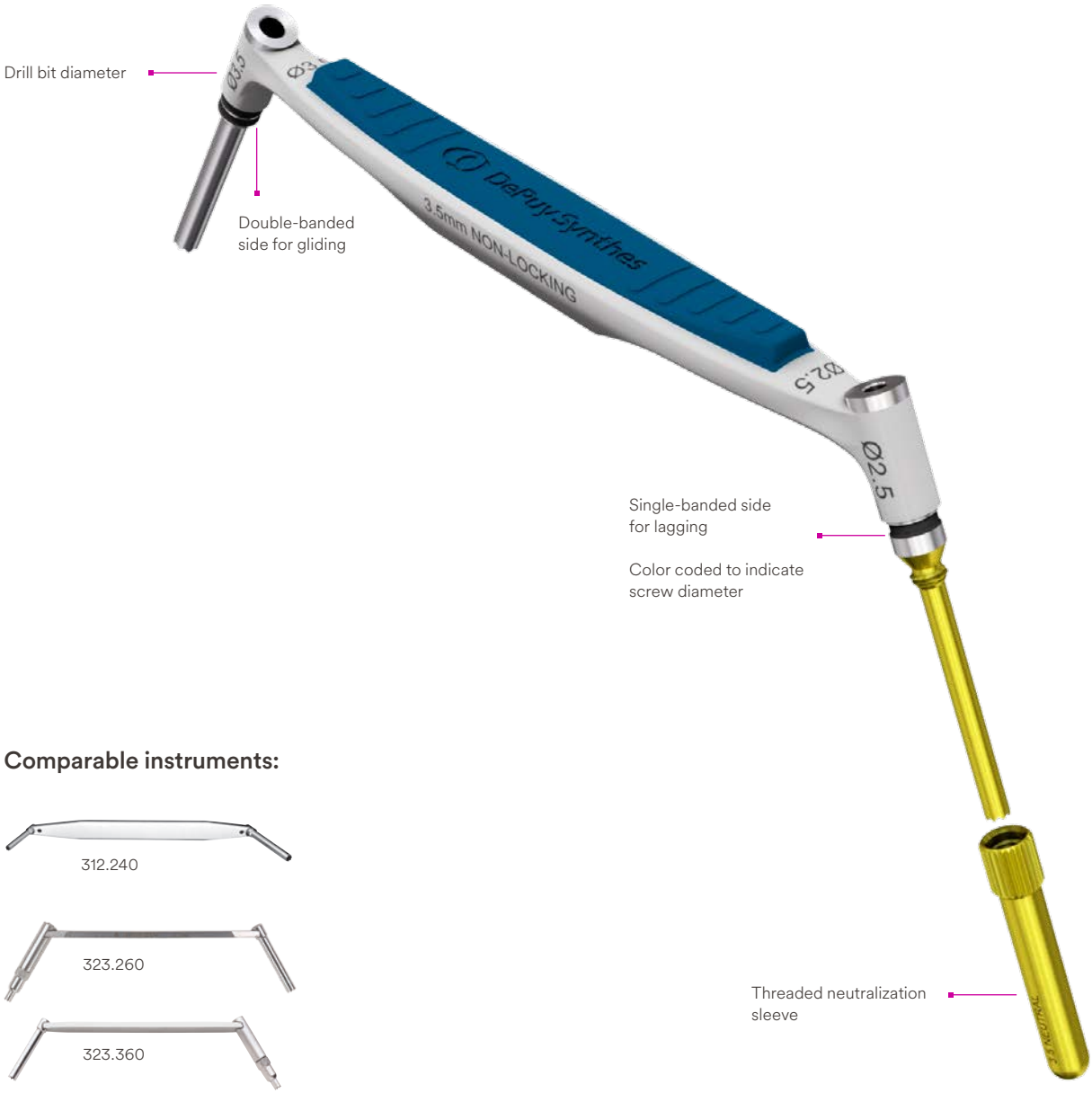
Instruments		
03.133.001	3.5 mm Neutral Sleeve Adapter	
03.133.002	3.5 mm Non-Locking Drill Guide	
03.133.005	2.7 mm Neutral Sleeve Adapter	
03.133.006	2.7 mm Non-Locking Drill Guide	
03.133.100*	2.0 mm Drill Bit/Quick Coupling 110 mm, 30 mm Calibration	
03.133.101*	2.0 mm Drill Bit/Quick Coupling 140 mm, 60 mm Calibration	
03.133.102*	2.5 mm Drill Bit/Quick Coupling 135 mm, 45 mm Calibration	
03.133.103*	2.5 mm Drill Bit/Quick Coupling 170 mm, 80 mm Calibration	
03.133.104*	2.5 mm Drill Bit/Quick Coupling 240 mm, 150 mm Calibration	
03.133.105*	2.7 mm Drill Bit/Quick Coupling 125 mm	
03.133.109*	3.5 mm Drill Bit/Quick Coupling 150 mm	
03.133.110*	3.5 mm Drill Bit/Quick Coupling 195 mm	
310.890	Countersink for 3.5 mm Cortex and 4.0 mm Cancellous Bone Screws	

Included in Universal Small Fragment tray for VA LCP Distal Fibula Plates with 4.0 mm Cortex Screws

312.401	Double Drill Guide 4.0 mm/2.9 mm
310.401	Drill Bit ∅ 4.0 mm, length 160 mm
310.229	Drill Bit ∅ 2.9 mm, length 150 mm



*Drill bits are available in both non-sterile and sterile packaging. To determine part number for the sterile-packaged drill bit, affix “S” to the end of the part number. E.g., the corresponding part number for the 2.0 mm Drill Bit/Quick Coupling 110 mm, 30 mm calibration delivered in sterile package is 03.133.100S.



Comparable instruments:

312.240

323.260

323.360

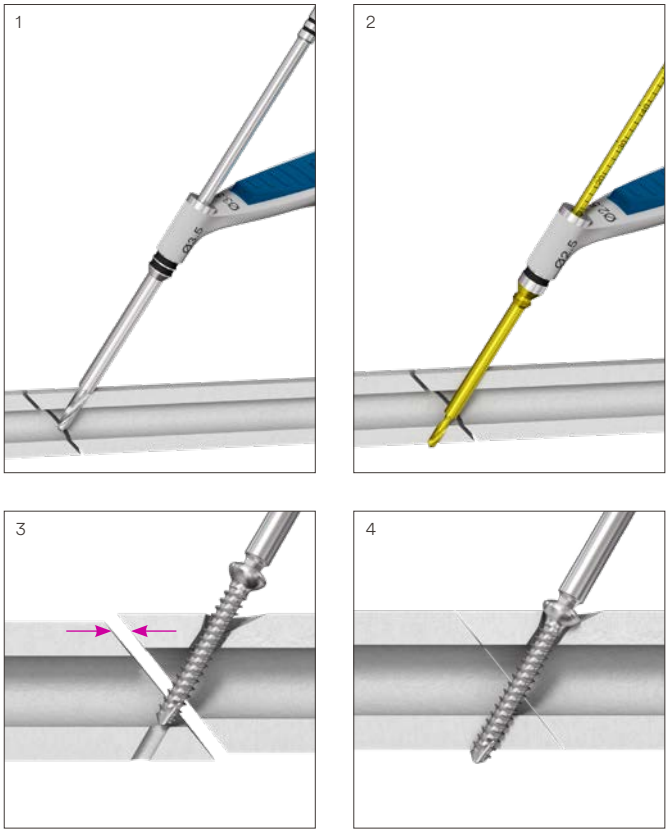
Lag screw technique

Interfragmentary compression is accomplished by using a lag screw. This is important in fractures which require a precise reduction of the joint surfaces. Lag screws can be placed either independently or with a plate. Countersinking the near cortex may be required to limit screw head prominence when used independently. Placement of the screw should be as perpendicular as possible to the fracture line.

To lag with a 3.5 mm cortex screw, use the 3.5 mm end (double-banded end) of the 3.5 mm Non-Locking Drill Guide (03.133.002) with a 3.5 mm drill bit to drill the near cortex. (Step 1) Insert the 2.5 mm end of the guide (single-banded end) fully into the hole previously drilled. Use a 2.5 mm drill bit to drill through the far cortex. (Step 2) Measure and insert the desired 3.5 mm cortex screw. (Steps 3 and 4).

To lag with a 2.7 mm cortex screw, use the 2.7 mm end (double-banded end) of the 2.7 mm Non-Locking Drill Guide (03.133.006) with a 2.7 mm drill bit to drill the near cortex. Insert the 2.0 mm end of the drill guide (single-banded end) fully into the hole previously drilled. Use a 2.0 mm drill bit to drill through the far cortex. Measure and insert the desired 2.7 mm cortex screw.

To lag with a 4.0 mm cortex screw, use the 4.0 mm end of the drill guide (312.401) with a 4.0 mm drill bit to drill the near cortex. Insert the 2.9 mm end of the drill guide fully into the hole previously drilled.
Use a 2.9 mm drill bit to drill through the far cortex.
Measure and insert the desired 4.0 mm cortex screw.



3.5 mm lag screw technique without plate

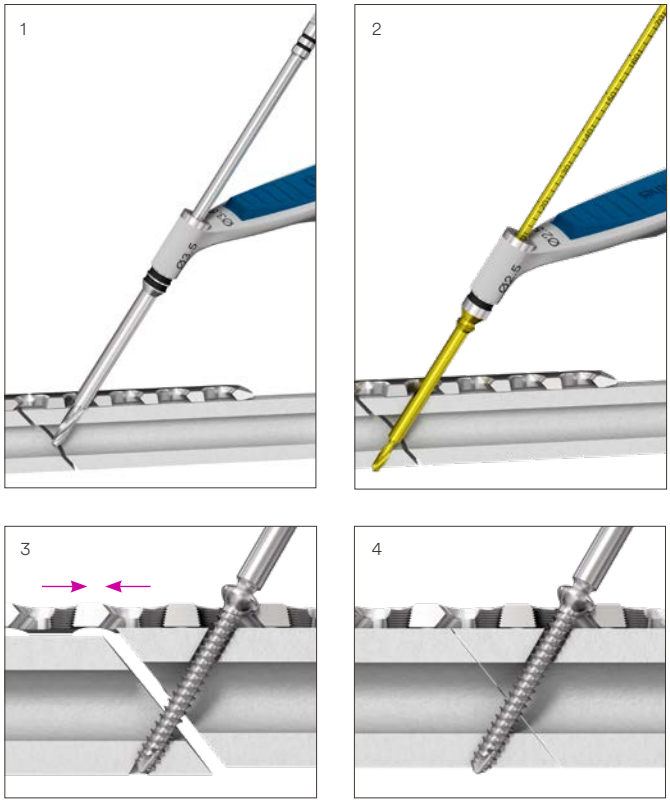
To lag with a plate, insert the appropriate drill end in a standard plate hole and follow above steps accordingly.

■ Notes:

- Lag screw fixation with or without plates should only be done after fracture reduction has taken place.
- Apply light pressure to ensure the non-locking drill guide is fully seated on either the bone or on the plate.
- Color bands indicate screw diameter application (Black: 3.5 mm, Orange 2.7 mm).
- The number of bands on non-locking drill guide indicate drilling types (single-banded: lagging drill guide; double-banded: gliding drill for lag technique) and coordinates with the bands on drill bits.
- Drill bits are single patient use.
- A torque limiting attachment is not needed for cortex screws.

▲ Precaution:

Do not measure with the calibration on drill bits when using lag screw technique.



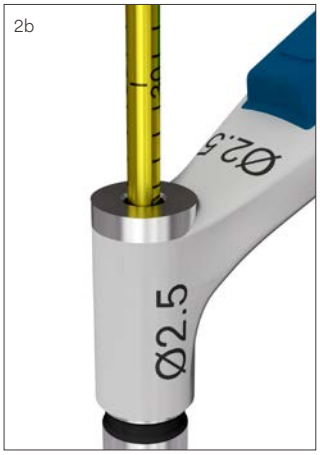
3.5 mm lag screw technique with plate

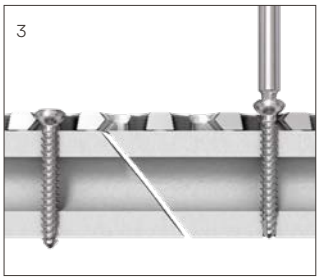
Neutral (i.e., centered) insertion

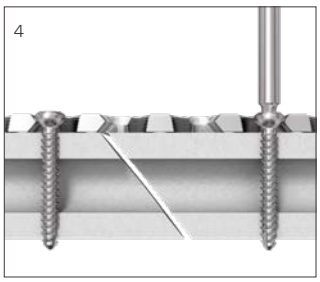
For neutral (i.e., centered) screw placement, thread the appropriate neutral sleeve adaptor onto the drill guide and place tip in the center of the Dynamic Compression Unit (DCU) screw hole. (Steps 1 and 2a) The 3.5 mm neutral sleeve adaptor threads onto the 2.5 mm end of the 3.5 Non-Locking Drill Guide. The 2.7 mm neutral sleeve adaptor threads onto the 2.0 mm end of the 2.7 mm Non-Locking Drill Guide. Compression will not occur (Steps 3 and 4) across the fracture.

The 2.0 mm and 2.5 mm Drill Bits are calibrated so that depth measurements can be read directly from the drill bit shaft. (2b)

Neutral (i.e., centered) insertion using a neutral sleeve adapter.
Shown for 3.5 mm screw insertion







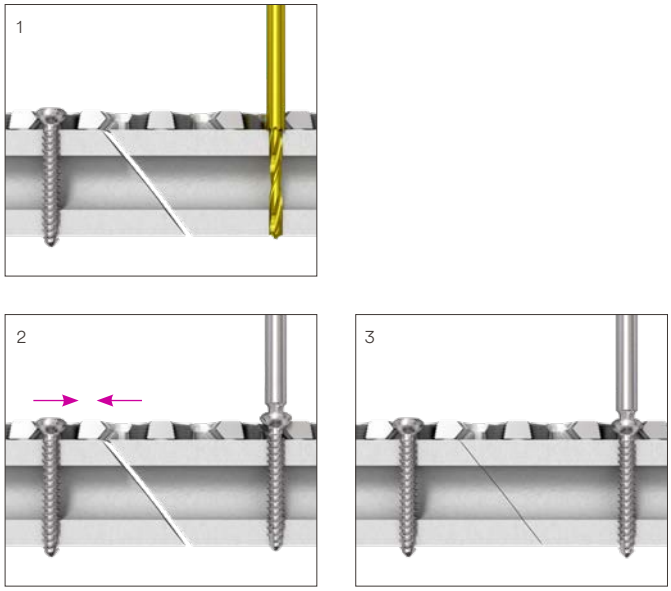
Screw insertion in neutral position using neutral sleeve adapter
(no compression)

Compression screw technique

Dynamic compression can be achieved by eccentric insertion of a cortex screw. To drill a hole for dynamic compression using a 2.7 mm cortex screw, place the 2.0 mm end of the drill guide tip eccentrically at the edge of the Dynamic Compression Unit (DCU) portion of the plate hole away from the fracture without neutral sleeve adapter (Step 1). Compression will occur as the cortex screw is inserted (Steps 2 and 3).

For 3.5 mm cortex screw, use the 2.5 mm end of the drill guide tip eccentrically and repeat steps above for dynamic compression using a 3.5 mm cortex screw.

The 2.0 mm and 2.5 mm Drill Bits are calibrated so that depth measurements can be read directly from the drill bit shaft.



Compression screw technique

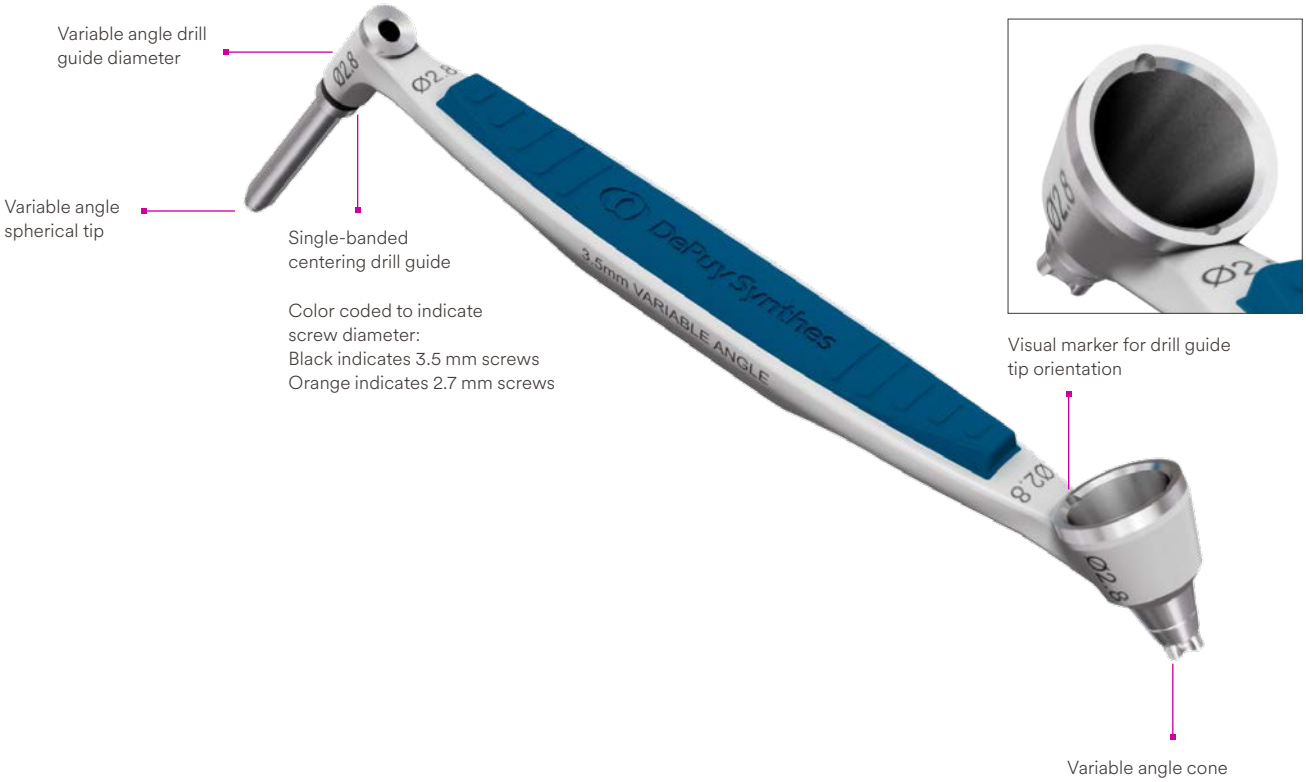
▲ Precautions:

- Non-Locking Drill Guides should not be used for screw insertion in locking and variable angle locking screw holes.
- Neutral (i.e., centered) sleeve adaptors are not designed for use with LCP Locking holes or variable angle locking holes. They should be used only with non-threaded holes or the non-threaded portion of Combi holes.
- Avoid excessive angulation when using the Neutral Sleeve Adapter in the non-threaded holes and stay nominal to the central axis of the hole.
- Ensure the drill bits do not contact the side of the plate holes.

2.7 mm and 3.5 mm Variable Angle drill guides and drill bits

Instruments		
03.133.003	3.5 mm Variable Angle Drill Guide	
03.133.007	2.7 mm Variable Angle Drill Guide	
03.133.100*	2.0 mm Drill/Bit Quick Coupling 110 mm, 30 mm Calibration	
03.133.101*	2.0 mm Drill/Bit Quick Coupling 140 mm, 60 mm Calibration	
03.133.106*	2.8 mm Drill/Bit Quick Coupling 135 mm, 45 mm Calibration	
03.133.107*	2.8 mm Drill Bit/Quick Coupling 170 mm, 80 mm Calibration	
03.133.108*	2.8 mm Drill Bit/Quick Coupling 200 mm, 110 mm Calibration	

*Drill bits are available in both non-sterile and sterile packaging. To determine part number for the sterile-packaged drill bit, affix “S” to the end of the part number. E.g., the corresponding part number for the 2.0 mm Drill Bit/Quick Coupling 110 mm, 30 mm calibration delivered in sterile package is 03.133.100S.



Comparable instruments:

03.211.002

03.211.003

03.211.004

03.127.002

03.127.004

03.127.005

03.127.006

Variable angle drilling

Before inserting the first locking screw, perform anatomical reduction. After the insertion of locking screws, compression of the plate will no longer be possible without loosening the locking screw.

Locking screws can be used to increase the rigidity of some fracture repairs and to indirectly support subchondral bone. For variable angle locking screws, insert the variable angle locking drill guide into the variable angle locking screw hole. The drill guide features a variable angle cone on one side and a variable angle spherical tip on the other.

When using the cone end in the desired VA LCP plate, press firmly to ensure the drill guide tip keys into the cloverleaf portion of the variable angle locking screw hole securely. The notches on top of the cone are visual markers for the drill guide tip orientation. The cone will provide a secure window of 30° angulation.

When using the spherical tip end, gently press the instrument into the variable angle hole. The lip portion of the spherical tip end engages with the cloverleaf portion of the hole to provide tactile feedback of the angulations. Continue to provide light pressure while holding the drill guide at the desired angle. The spherical tip end of the drill guide provides freedom to chose angulation.
To ensure a precise 15° angulation, use the cone end of the Variable Angle drill guide.

Use 2.8 mm drill bits with the 3.5 mm Variable Angle Drill Guide. Use 2.0 mm drill bits with the 2.7 mm Variable Angle Drill Guide. The drill bits are calibrated so that depth measurements can be read directly from the drill bit shaft when using the spherical tip end only; calibrations do not apply for the Variable Angle Drill Guide cone.

■ Notes:

- Color bands indicate screw diameter application (Black: 3.5 mm, Orange 2.7 mm).
- When drilling, the tip of the drill guide should remain fully seated in the plate hole.
- The drill bit angle may be verified under fluoroscopy to ensure the desired angle has been achieved.
- When using the Variable Angle drill guides, inserting the screw at the nominal angle will ensure lowest possible profile construct.
- Drill guides are not self-retaining.
- For 2.7 mm Variable Angle Drill Guide, use 2.0 mm drill bits.
- For 3.5 mm Variable Angle Drill Guide, use 2.8 mm drill bits.
- Calibrated drill bits should not be used to measure screw length through the cone portion of the Variable Angle Drill Guides.

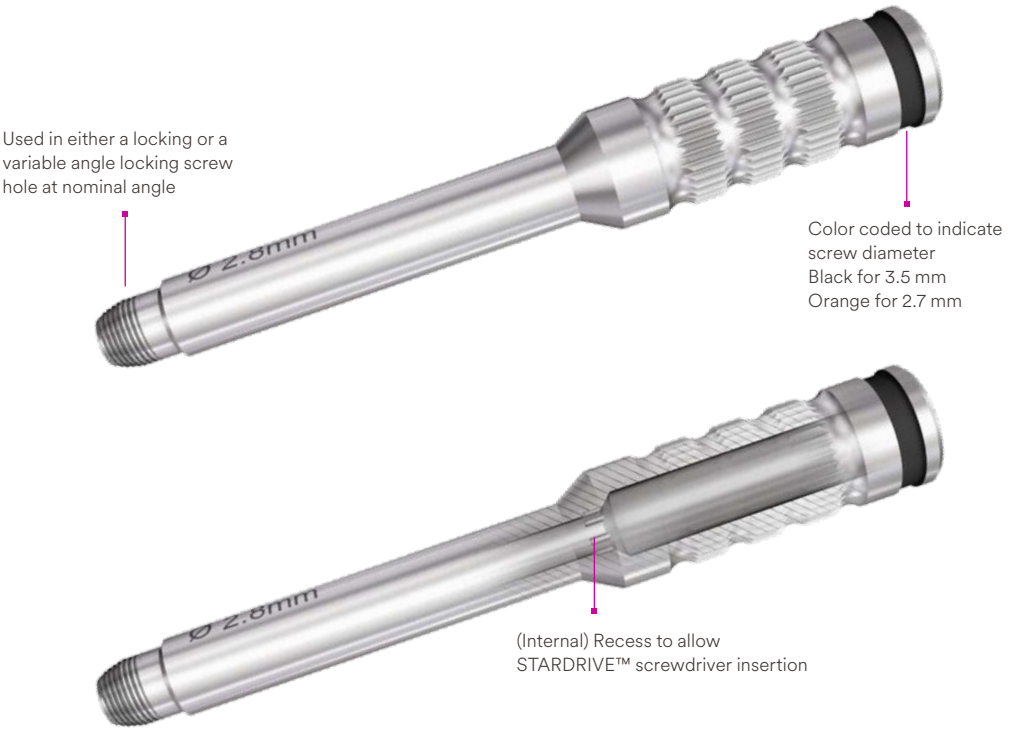
▲ Precaution:

Avoid applying excessive force on drill guides.

Angle Threaded Drill Guides and Drill Bits for VA LCP and LCP

Instruments	
03.133.004	2.8 mm Threaded Guide for 3.5 mm Screw
03.133.008	2.0 mm Threaded Guide for 2.7 mm Screw
03.133.100*	2.0 mm Drill Bit/Quick Coupling 110 mm, 30 mm Calibration
03.133.101*	2.0 mm Drill Bit/Quick Coupling 140 mm, 60 mm Calibration
03.133.106*	2.8 mm Drill Bit/Quick Coupling 135 mm, 45 mm Calibration
03.133.107*	2.8 mm Drill Bit/Quick Coupling 170 mm, 80 mm Calibration
03.133.108*	2.8 mm Drill Bit/Quick Coupling 200 mm, 110 mm Calibration
314.116	STARDRIVE™ Screwdriver Shaft/T15
314.467	STARDRIVE™ Screwdriver Shaft/T8

*Drill bits are available in both non-sterile and sterile packaging. To determine part number for the sterile-packaged drill bit, affix “S” to the end of the part number. E.g., the corresponding part number for the 2.0 mm Drill Bit/Quick Coupling 110 mm, 30 mm calibration delivered in sterile package is 03.133.100S.



Comparable instruments:

313.353

312.648

03.127.001

Insertion of 2.7 mm and 3.5 mm variable angle locking screws and/or locking screws

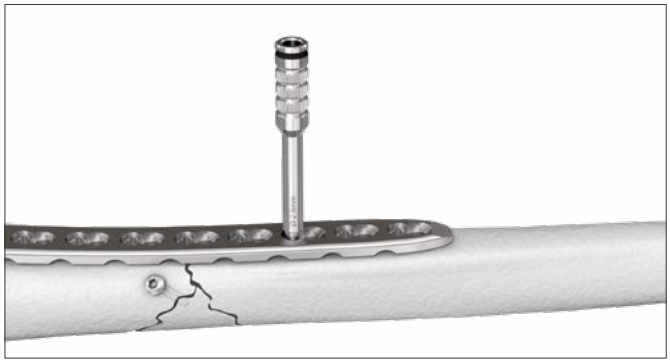
Before inserting the first locking screw, perform anatomical reduction and fix the fracture with lag screw technique, if necessary. After the insertion of a locking and/or variable angle locking screw, compression of the plate will no longer be possible without first loosening the locking and/or variable angle locking screw.

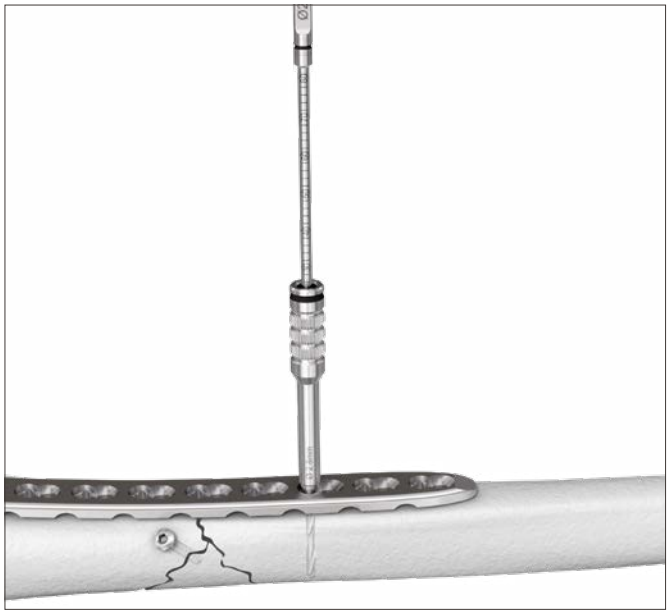
For insertion of 3.5 mm locking and variable angle locking screws at the nominal angle, screw the 2.8 mm Threaded Guide (03.133.004) onto the plate hole perpendicularly until fully seated. To ease threading, engage the drill guide with the plate hole by making a quarter turn counterclockwise until the starting thread of the drill guide engages the threads of the plate hole. Turn clockwise once threads are engaged. Use 2.8 mm drill bits to drill through the threaded drill guide. The drill bits are calibrated and depth measurements can be read directly from the drill bit shaft.

For insertion of 2.7 mm locking and variable angle locking screws at the nominal angle, screw the 2.0 mm Threaded Guide (03.133.008) onto the plate screw hole perpendicularly until fully seated. To ease threading, engage the drill guide with the plate hole by making a quarter turn counterclockwise until the starting thread of the drill guide engages the threads of the plate hole. Turn clockwise once threads are engaged. Use 2.0 mm drill bits to drill through the threaded drill guide. The drill bits are calibrated and depth measurements can be read directly from the drill bit shaft.

The screwdriver handle may be used to insert the threaded drill guides. STARDRIVE screwdriver shafts can be inserted into the back of the threaded drill guides. For the 2.8 mm Threaded Guide, use STARDRIVE screwdriver shaft T15 (314.116). For 2.0 mm Threaded Guide, use STARDRIVE screwdriver T8 (314.467).

Since the direction of a locking screw is determined by plate design, final screw position may be verified with a K-wire prior to insertion.





Drill bits are calibrated so that depth measurements can be read directly from the drill guide shaft.

■ Notes:

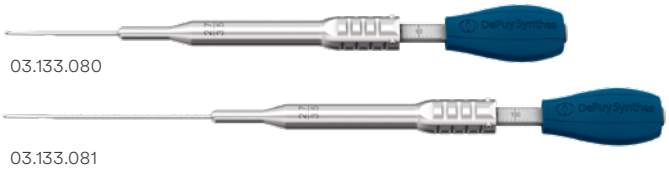
- Color bands indicate screw diameter application (Black: 3.5 mm, Orange: 2.7 mm).
- Locking screws should not be used for lag screw technique. Use non-locking screws when requiring anatomical reduction (e.g., joint surfaces) or inter-fragmentary compression.
- The threaded guide can only be threaded at the nominal angle to the plate screw hole for locking and variable angle locking screw holes.
- Make a quarter turn counterclockwise to engage the threaded drill guide threads to plate hole threads.

▲ Precautions:

- Avoid overtorquing when threading the drill guide into locking and variable angle locking screw holes.
- Overtorquing can give a false impression of guide seating. Overtorquing and cross threading may cause screw hole damage.
- Improper placement of threaded drill guide can lead to locking screws not locking into the locking plate hole.
- Do not bend the plate using the threaded drill guide. Damage may occur to the plate hole threads.

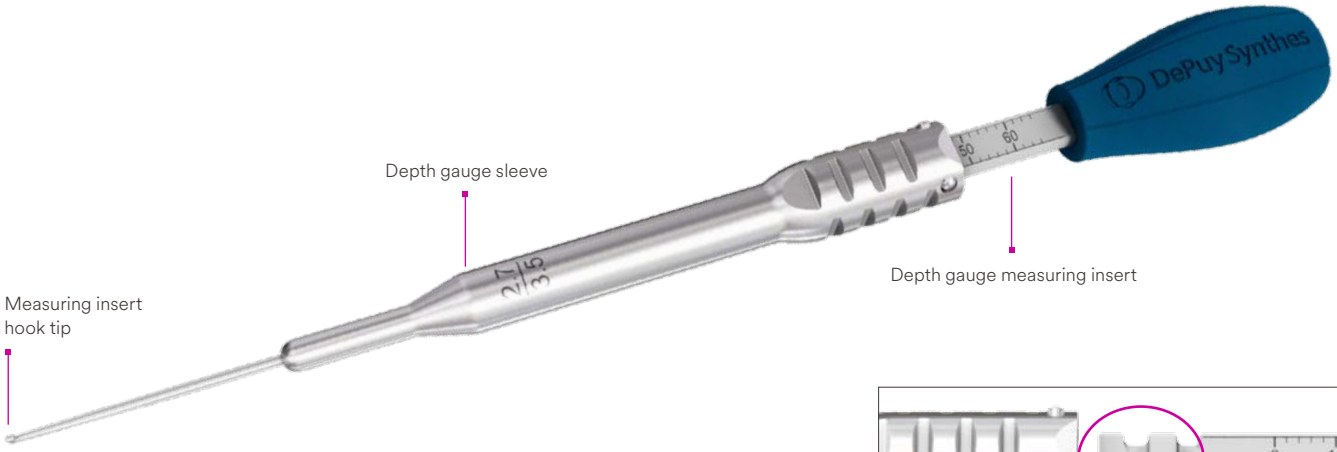
Depth measurement

Instruments	
03.133.080	2.7/3.5 mm Depth Gauge 0 to 60 mm
03.133.081	2.7/3.5 mm Depth Gauge 40 to 100 mm



03.133.080

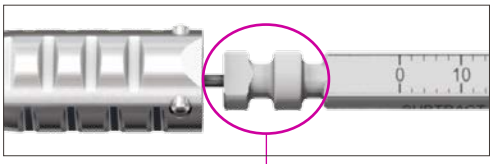
03.133.081



Depth gauge sleeve

Depth gauge measuring insert

Measuring insert
hook tip



Depth gauge key feature

Comparable instruments:

319.010

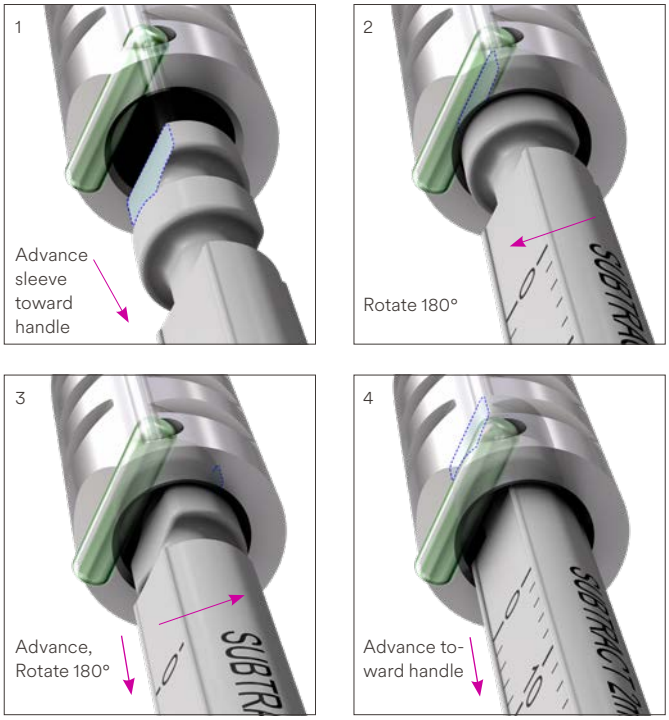
319.090

The 2.7/3.5 mm Depth Gauge is available in two length measurements ranging from 0 to 60 mm (03.133.080) and from 40 to 100 mm (03.133.081). The depth gauge consists of two parts: a metal sleeve and the measuring insert with hook tip.

The measuring insert with hook tip has a key feature appearing at the end of the measuring segment of the measuring insert to ensure that the metal sleeve stays on the depth gauge during use.

Depth Gauge Assembly

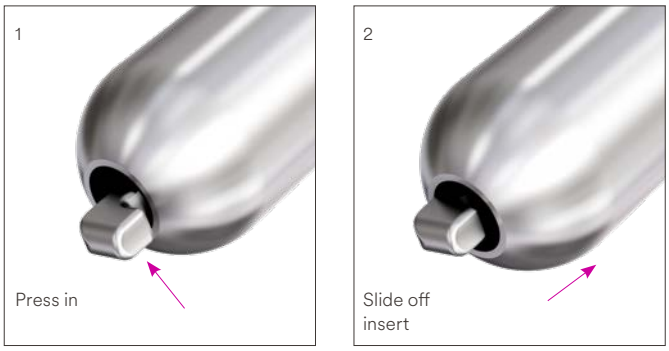
The depth gauge 0 to 60 mm appears in the Insertion Tray disassembled into two pieces: the metal sleeve and the measuring insert with hook tip. To assemble, insert the measuring insert through the sleeve. Match the depth gauge key to the top of the depth gauge sleeve D-shape and gently advance towards the measuring insert handle until it stops (1). Rotate 180 degrees in one direction while gently advancing toward the handle until a stop is felt (2). Turn another 180 degrees in the opposite direction with gentle pressure applied on the sleeve towards the handle (3). Advance the remainder of the insert down the depth gauge sleeve until the sleeve meets the depth gauge handle (4).



Depth gauge assembly

Depth Gauge Disassembly

To disassemble, advance the sleeve away from the handle until it stops at the hook tip. Push in hook tip to slide sleeve over the hook. The sleeve will stop at the key feature. Reverse steps for assembly described above to complete disassembly (1 and 2).

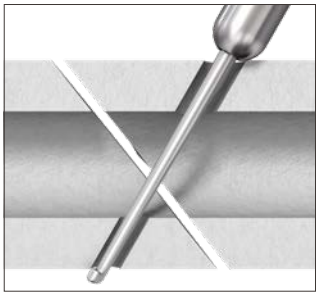


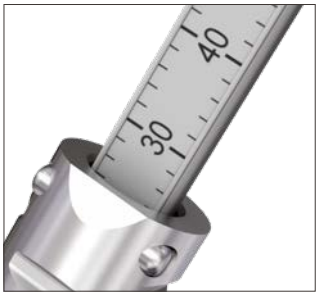
Final steps to depth gauge disassembly

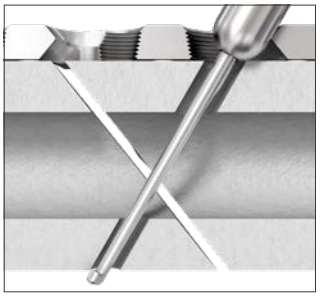
Measurement using Depth Gauge

For measuring, insert the depth gauge tip through the drilled hole and measure. For bi-cortical measuring, insert the depth gauge tip through both cortices and hook onto the far cortical bone by pulling the knob up until it stops. Depth marks are provided on both sides and length is read from the top edge of the metal sleeve from either side.

For the 2.7 mm locking and variable angle locking screws only, subtract 2 mm from the reading of the depth gauge to compensate for varying depth gauge to plate screw hole interfaces.







■ Notes:

- Depth gauge must be disassembled for cleaning and sterilization.
- When measuring for 2.7 mm locking or variable angle locking screws, subtract 2 mm from the reading from the Depth Gauge. No subtraction is required for 3.5 mm and 4.0 mm screws and 2.7 mm non-locking screws.
- Maximum measurement for the 2.7/3.5 mm Depth Gauge 0 to 60 mm (03.133.080) is 66 mm.
- Maximum measurement for the 2.7/3.5 mm Depth Gauge 40 to 100 mm (03.133.081) is 106 mm.
- For the limits of accuracy of the Depth Gauges, see eIFU for Measuring Instruments.

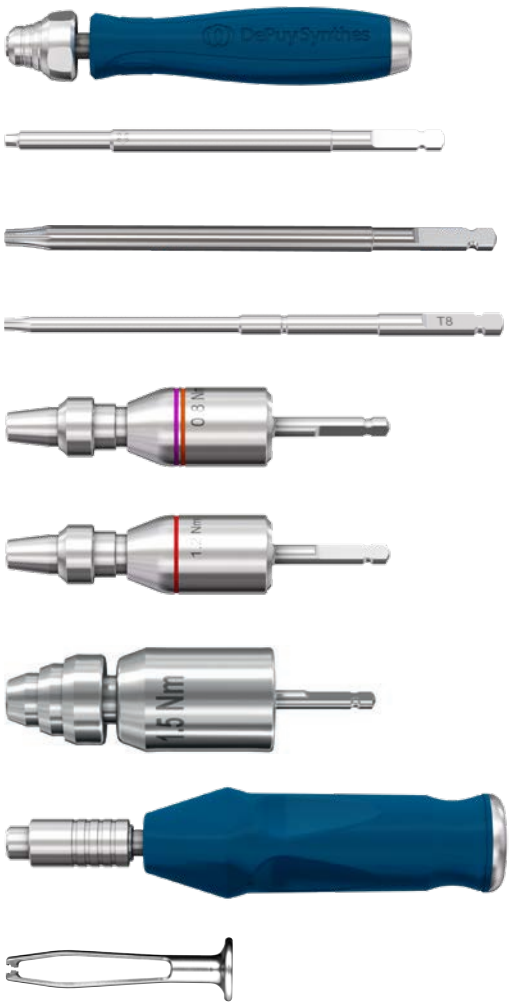
▲ Precaution:

Use care in carefully pushing in depth gauge measuring insert hook tip. Hook tip may be sharp and may pinch or tear user's glove or skin.

Screw Insertion

Instruments

03.133.150	Universal Screwdriver Handle
03.133.175	2.5 mm Hex Driver Shaft, Self-Retaining Length 100 mm Quick Coupling
314.116	STARDRIVE™ Screwdriver Shaft/T15
314.467	STARDRIVE™ Screwdriver Shaft/T8
511.776	Torque Limiting Attachment 0.8 Nm
03.110.002	Torque Limiting Attachment 1.2 Nm
511.773	Torque Limiting Attachment 1.5 Nm
03.127.016	Torque Limiting Handle 2.5 Nm
314.060	Holding Sleeve



Comparable instruments:

314.030

314.115

311.430

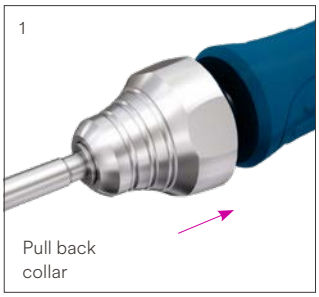
314.020

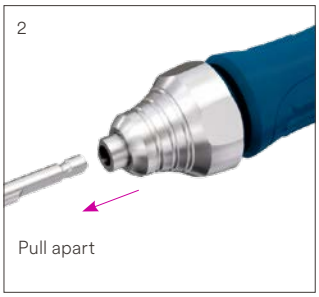
Manual insertion

To manually insert a non-locking screw, attach the appropriate screwdriver shaft onto the Universal Screwdriver Handle (03.133.150). Insert the screwdriver tip into the recess of the desired screw to retrieve it from the screw rack. Advance the screw until it is fully seated.

To manually insert a locking screw, attach the appropriate torque limiting attachment (TLA) onto the universal screwdriver handle and insert desired screwdriver shaft. For example, for 3.5 mm variable angle locking screws, the 2.5 Nm Torque Limiting handle is used to achieve final torque. Insert the screwdriver tip into the recess of the desired screw to retrieve it from the screw rack. Ensure the screw trajectory is not intersecting the other screw trajectories. Advance the screw and lock it in the plate. The TLA will provide an audible click once torque value is reached indicating that the screw is seated and locked.

After use, screw driver shaft must be disassembled from the handle prior to cleaning and sterilization. To disassemble, retract collar on screwdriver (1). Gently advance the driver shaft away from universal screwdriver handle (2).





■ Notes:

- Carefully tighten the locking screw, as excessive force is not necessary to produce effective screw-to-plate locking.
- The self-retaining 2.5 mm hex driver shaft will not retain screws with 2.7 mm or 3.5 mm low profile heads.
- Screwdriver shaft must be removed from the universal screwdriver handle prior to cleaning and sterilization.

▲ Precaution:

Use the Holding Sleeve (314.060) along with the 2.5 mm hex shaft if the self-retaining hex driver shaft does not retain screw during removal from the screw rack.

Power insertion

To insert screw under power, attach the appropriate screwdriver shaft to the desired power instrument.

For locking screws, attach the appropriate torque limiting attachment (TLA) along with the screwdriver shaft to the desired power instrument. Refer to Screw Reference Chart for appropriate torque limiting attachment (TLA) to use.

■ Notes:

- Always use a torque limiting attachment (TLA) when inserting variable angle locking and locking screws.
- Do not lock the screws at full speed to reduce the risk of stripping the head. This can make it difficult to remove the implant.
- For long screws and thick cortical bone, ensure sufficient cooling during insertion.
- Recheck each locking screw before closing to verify that the screws are securely locked to the plate.
- Locking Screw heads must be flush with the plate in the locked position before they can be considered fully seated.
- Variable angle locking screw heads will not be flush unless placed at a nominal angle.

▲ Precaution:

Speed of drilling directly correlates to temperature at the bone interface. High temperatures could impact screw to bone interface and may impact clinical outcome.

Surgical Closure Procedure

Closure

Inspect construct by rechecking each screw before closing to verify that the screws are secure. Thoroughly irrigate the wound prior to closure. Use fluoroscopy to check fracture reduction, plate placement, screw trajectory, and screw length.

Notes:

- Locking screw heads must be flush with the plate in the locked position before they can be considered fully seated.
- Variable angle locking screw heads will not be flush unless placed at a nominal angle.

Post-Op Support and Implant Removal

Postoperative treatment

Postoperative treatment with VA LCP and LCP plating technology does not differ from conventional internal fixation procedures.

Implant removal

Please refer to the specific anatomic implant surgical technique for instruments for implant removal. A list of existing systems supported by the Universal Small Fragment System is available in the Supported Plating Systems section of this document.

Universal Small Fragment System Configuration

Available core sets and trays within the Universal Small Fragment System

Universal Small Fragment System Description Detail		Stainless Steel	Titanium
Core Set	• Auxiliary Tray • Insertion Tray • Reduction Tray • Screw Rack • Standard Plate Tray	x	x
Core Set Without Drill Bits	• Auxiliary Tray • Insertion Tray w/o Drill Bits • Reduction Tray	x	x
Standard Plate Tray	• 2.7 mm LCP Straight • 3.5 mm LCP Straight • 3.5 mm LCP T-Plate • K-Wires • One-Third Tubular	x	x
Screw Rack	• 2.7 mm Cortex • 2.7 mm Locking • 2.7 mm Metaphyseal • 2.7 mm Variable Angle Locking • 3.5 mm Cortex • 3.5 mm Locking • 3.5 mm Variable Angle Locking • 4.0 mm Cancellous/Cortex • Washers	x	x*
Shoulder/Clavicle Anatomy Tray	• LCP Superior Anterior Clavicle and Superior Anterior Clavicle with Extension • LCP Superior Clavicle and Superior Clavicle with Extension • LCP Periarticular Proximal Humerus • LCP Proximal Humerus • VA LCP Anterior Clavicle	x	x
Elbow Anatomy Tray	• LCP Distal Humerus • LCP Hook • VA LCP DHP Posterolateral and Posterolateral with Support • VA LCP Lateral DHP • VA LCP Medial DHP and Medial DHP with Extension • VA LCP Olecranon • VA LCP Proximal Olecranon	x	x
VA LCP Proximal Tibia Anatomy Tray	• 3.5 mm Variable Angle Locking Long Screws • 3.5 mm Cortex Long Screws • Depth Gauge 40 mm to 100 mm • Drill Bits • VA LCP Proximal Tibia Small and Large Bend	x	
LCP Proximal Tibia Anatomy Tray	• 3.5 mm Locking Long Screws • 3.5 mm Cortex Long Screws • Depth Gauge 40 mm to 100 mm • Drill Bits • LCP Proximal Tibia Standard and Low Bend • LCP Medial Proximal Tibia • LCP Posterior Medial Proximal Tibia	x	x
VA LCP Distal Tibia Anatomy Tray	• VA LCP Anterolateral Distal Tibia • VA LCP Medial Distal Tibia • VA LCP Posterolateral Distal Tibia	x	
LCP Distal Tibia Anatomy Tray	• LCP Anterolateral Distal Tibia • LCP Hook • LCP Medial Distal Tibia Low Bend	x	x
VA LCP Distal Fibula Anatomy Tray	• VA LCP Lateral Distal Fibula	x	x
VA LCP Distal Fibula with 4.0 mm Cortex Screws Anatomy Tray	• VA LCP Lateral Distal Fibula • 4.0 mm Cortex	x	x
LCP Distal Fibula Anatomy Tray	• LCP Hook • LCP Lateral Distal Fibula	x	x

*3.5 mm Variable Angle Locking Screws not available in Titanium.

Core Set

Stainless Steel and Titanium

Trays

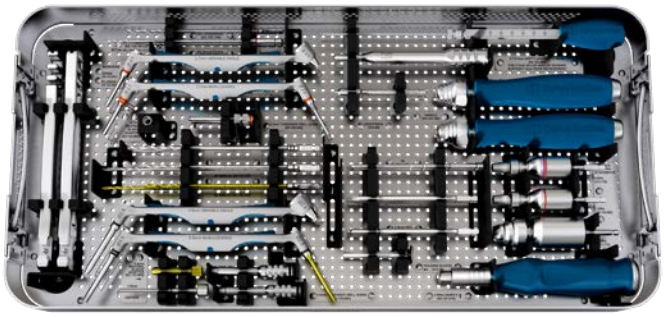
60.133.100	Universal Small Fragment Insertion Tray
60.133.102	Universal Small Fragment Standard Plate Tray
60.133.103	Auxiliary Tray (1/3 Width)
60.133.130	Universal Small Fragment Reduction Tray
60.133.150	Universal Small Fragment Screw Rack

Outer Case and Lid

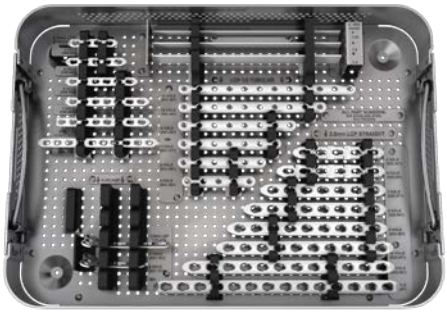
60.133.000	Outer Case Lid (3/3 Width)
60.133.003	Outer Case 3 High (3/3 Width)

Optional Tray Lids

60.133.109	Tray Lid (3/3 Width)
60.133.110	Tray Lid (2/3 Width)
60.133.111	Tray Lid (1/3 Width)

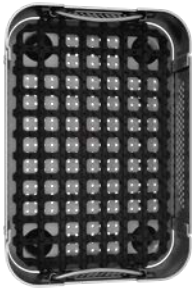


Insertion Tray



Standard Plate Tray

Reduction Tray



Auxiliary Tray

Screw Rack (shown without lid)

Outer Case Lid

Outer Case 3 High

Core Set Without Drill Bits

Trays

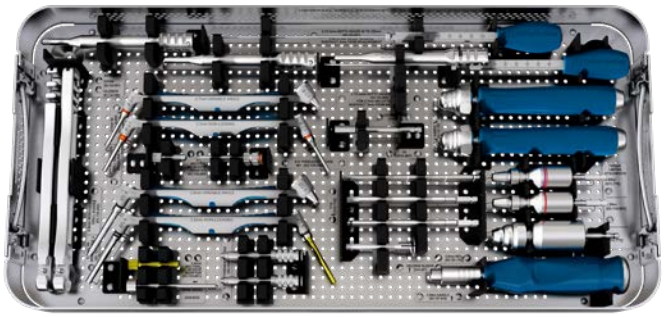
60.133.118	Universal Small Fragment Insertion Tray Without Drill Bits
60.133.103	Auxiliary Tray (1/3 Width)
60.133.130	Universal Small Fragment Reduction Tray

Outer Case and Lid

60.133.000	Outer Case Lid (3/3 Width)
60.133.002	Outer Case 2 High (3/3 Width)

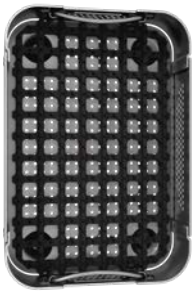
Optional Tray Lids

60.133.109	Tray Lid (3/3 Width)
60.133.111	Tray Lid (1/3 Width)



Insertion Tray w/o Drill Bits

Reduction Tray



Auxiliary Tray

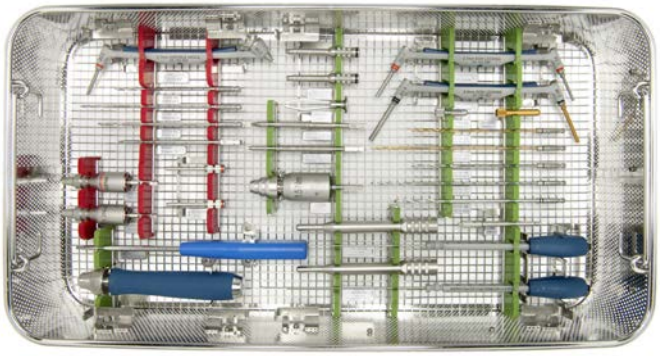
Outer Case Lid

Outer Case 2 High

Core Set NTOC Configuration

Trays

68.033.114	NTOC Cassette for Universal Small Fragment System*
68.033.115	NTOC Cassette for USFS* VA Locking Screws 3.5 Instruments
68.033.116	NTOC Cassette for USFS Reduction Instruments*
68.033.117	Auxiliary Inlay for NTOC Cassette*



NTOC Cassette for Universal Small Fragment System

NTOC Cassette for USFS VA Locking Screws 3.5 Instruments

NTOC Cassette for USFS Reduction Instruments

* Manufactured by: NTOC medische techniek B.V., Tubantenweg 21, 5349 BE Oss, The Netherlands
Distributed by: Synthes GmbH, Eimattstrasse 3, 4436 Oberdorf, Switzerland

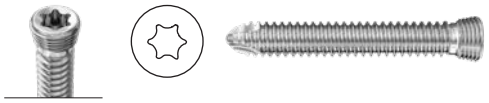
Screw Rack

Stainless Steel and Titanium

2.7 mm Variable Angle Locking Screw, Self-Tapping, T8 STARDRIVE™ Recess

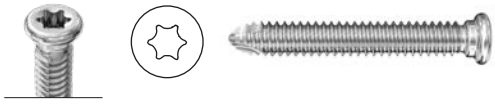
Stainless Steel	Titanium	Description
02.211.010–060	04.211.010–060	10 mm–60 mm (2 mm increments)

2.7 mm Locking Screw, Self-Tapping, T8 STARDRIVE™ Recess



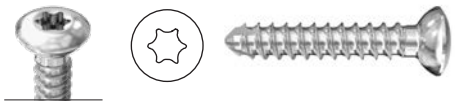
Stainless Steel	Titanium	Description
202.210–250	402.210–250	10 mm–50 mm (2 mm increments)
202.255–260	402.255–260	55 mm, 60 mm

2.7 mm Metaphyseal Screw, Self-Tapping, T8 STARDRIVE™ Recess



Stainless Steel	Titanium	Description
02.118.510–560	04.118.510–560	10 mm–60 mm (2 mm increments)

2.7 mm Cortex Screw, Self-Tapping, T8 STARDRIVE™ Recess



Stainless Steel	Titanium	Description
202.870–900	402.870–900	10 mm–40 mm (2 mm increments)
202.962–963	402.962–963	42 mm, 44 mm
202.965–967	402.965–967	46 mm–50 mm (2 mm increments)
202.968–969	402.968–969	55 mm, 60 mm

3.5 mm Variable Angle Locking Screw, Self-Tapping, T15 STARDRIVE™ Recess

Stainless Steel	Titanium	Description
02.127.110–160	n/a	10 mm–60 mm (2 mm increments)

3.5 mm Locking Screw, Self-Tapping, T15 STARDRIVE™ Recess

Stainless Steel	Titanium	Description
212.101–118	412.101–118	10 mm–42 mm (2 mm increments)
212.119	412.119	45 mm
212.134–136	412.134–136	44 mm, 46 mm
212.120–122	412.120–122	48 mm–52 mm (2 mm increments)
02.212.054–058	04.212.054–058	54 mm–58 mm (2 mm increments)
212.123–124	412.123–124	55 mm, 60 mm

3.5 mm Cortex Screw, Self-Tapping, 2.5 mm Hex Recess**

Stainless Steel	Titanium	Description
204.810–840	404.810–840	10 mm–40 mm (2 mm increments)
204.842–848	404.842–848	42 mm–48 mm (2 mm increments)
204.845–855	404.845–855	45 mm–55 mm (5 mm increments)
204.860	404.860	60 mm

4.0 mm Cancellous Screw, Fully Threaded, 2.5 mm Hex Recess

Stainless Steel	Titanium	Description
206.010–030	406.010–030	10 mm–30 mm (2 mm increments)
206.035–060	406.035–060	35 mm–60 mm (5 mm increments)

4.0 mm Cortex Screw, Fully Threaded, 2.5 mm Hex Recess*

Stainless Steel	Titanium	Description
206.414–460	406.414–460	14 mm–60 mm (2 mm increments)

* For use with 2.7 mm VA LCP Lateral Distal Fibula Plate only.
** Not available “TS” packed.

Washers

Stainless Steel	Titanium	Description
219.980	419.980	7.0 mm Washers
219.910*	419.910*	10.0 mm Washers

Push Pins

60.116.507	Screw Type Push Pin/Cortex
60.116.513	Screw Type Push Pin/Locking
60.116.521	Screw Type Push Pin/Variable Angle Locking
60.116.527	Screw Type Push Pin/Metaphyseal

Screws available in sterile and non-sterile packaging. Affix “S” or “TS” to the end of the part number to obtain part number sterile packed screw.

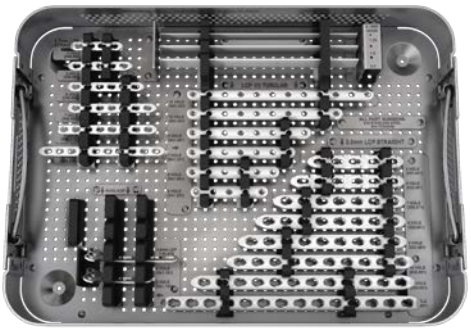
Additional screws may be available from the screw families above, but are not configured in the Universal Small Fragment Screw Rack. Please check for product availability either in non-sterile or sterile packaging using the latest product catalog.

* For use with 4.0 mm Cortex screw only.

Standard Plate Tray

LCP Stainless Steel and Titanium

Graphic Case

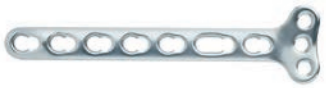


60.133.102	Universal Small Fragment Standard Plate Tray
60.133.110	Tray Lid 2/3 Width

Implants

Stainless Steel	Titanium	Description
223.551	423.551	3.5 mm LCP, 5 holes
223.561	423.561	3.5 mm LCP, 6 holes
223.571	423.571	3.5 mm LCP, 7 holes
223.581	423.581	3.5 mm LCP, 8 holes
223.591	423.591	3.5 mm LCP, 9 holes
223.601	423.601	3.5 mm LCP, 10 holes
223.621	423.621	3.5 mm LCP, 12 holes
223.641	423.641	3.5 mm LCP, 14 holes

241.131	441.131	3.5 mm LCP T-Plate, 3 holes
241.151	441.151	3.5 mm LCP T-Plate, 5 holes



241.351	441.351	3.5 mm LCP One-third Tubular Plate, 5 holes
241.361	441.361	3.5 mm LCP One-third Tubular Plate, 6 holes
241.371	441.371	3.5 mm LCP One-third Tubular Plate, 7 holes
241.381	441.381	3.5 mm LCP One-third Tubular Plate, 8 holes
241.401	441.401	3.5 mm LCP One-third Tubular Plate, 10 holes
241.421	441.421	3.5 mm LCP One-third Tubular Plate, 12 holes

249.680	449.680	2.7 mm LCP Plate, straight, 4 holes
249.681	449.681	2.7 mm LCP Plate, straight, 5 holes
249.682	449.682	2.7 mm LCP Plate, straight, 6 holes
249.683	449.683	2.7 mm LCP Plate, straight, 7 holes
247.372	447.372	2.7 mm LCP Plate, straight, 8 holes
247.374	447.374	2.7 mm LCP Plate, straight, 10 holes

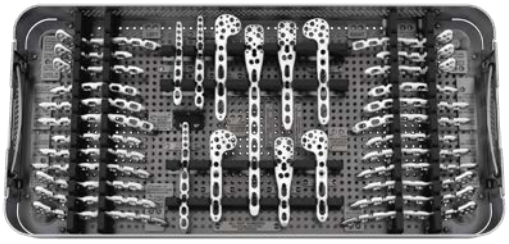
Additional standard plates may be available from the plate families above but are not configured in the Universal Small Fragment Standard Plates Tray. Affix “S” to the end of the part number to obtain part number for sterile packaged implant. Please check for product availability either in non-sterile or sterile packaging using the latest product catalog.

Shoulder/Clavicle Anatomy Tray

LCP and VA LCP, Stainless Steel and Titanium

Graphic Case

60.133.106	Universal Small Fragment Shoulder/ Clavicle Anatomy Tray
60.133.109	Tray Lid 3/3 Width



Implants

3.5 mm LCP Superior Anterior Clavicle Plate with Lateral Extension

Stainless Steel	Titanium	Holes	Length	Detail
02.112.010	04.112.010	4	81 mm	Right
02.112.011	04.112.011	4	81 mm	Left
02.112.012	04.112.012	5	94 mm	Right
02.112.013	04.112.013	5	94 mm	Left
02.112.008	04.112.008	6	108 mm	Right
02.112.009	04.112.009	6	108 mm	Left

3.5 mm LCP Superior Anterior Clavicle Plate

Stainless Steel	Titanium	Holes	Length	Detail
02.112.026	04.112.026	6	94 mm	Right
02.112.027	04.112.027	6	94 mm	Left
02.112.028	04.112.028	7	110 mm	Right
02.112.029	04.112.029	7	110 mm	Left
02.112.030	04.112.030	8	120 mm	Right
02.112.031	04.112.031	8	120 mm	Left

2.7 mm/3.5 mm VA LCP Anterior Clavicle Plate

Stainless Steel	Titanium	Holes	Length
02.112.046	04.112.046	9	89 mm
02.112.047	04.112.047	10	101 mm
02.112.048	04.112.048	11	113 mm

3.5 mm LCP Superior Clavicle Plate

Stainless Steel	Titanium	Holes	Length	Detail
02.112.080	04.112.080	6	85 mm	Right
02.112.081	04.112.081	6	85 mm	Left
02.112.082	04.112.082	7	100 mm	Right
02.112.083	04.112.083	7	100 mm	Left
02.112.084	04.112.084	8	115 mm	Right
02.112.085	04.112.085	8	115 mm	Left

3.5 mm LCP Superior Clavicle Plate with Lateral Extension

Stainless Steel	Titanium	Holes	Length	Detail
02.112.090	04.112.090	6	105 mm	Right
02.112.091	04.112.091	6	105 mm	Left
02.112.092	04.112.092	7	120 mm	Right
02.112.093	04.112.093	7	120 mm	Left
02.112.094	04.112.094	8	130 mm	Right
02.112.095	04.112.095	8	130 mm	Left

3.5 mm LCP Periarticular Proximal Humerus Plate

Stainless Steel	Titanium	Holes	Length	Detail
02.123.020	04.123.020	2	91 mm	Right
02.123.021	04.123.021	2	91 mm	Left
02.123.040	04.123.040	3	109 mm	Right
02.123.041	04.123.041	3	109 mm	Left

3.5 mm LCP Proximal Humerus Plate

Stainless Steel	Titanium	Holes	Length	Detail
241.901	441.901	3	90 mm	Standard
241.903	441.903	5	114 mm	Standard
241.921	441.921	8	196 mm	Long

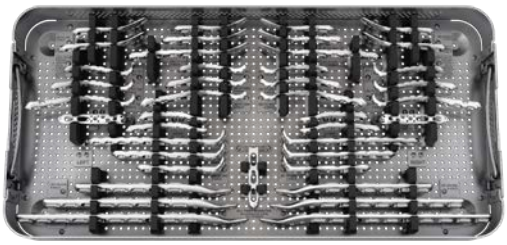
Plates configured for 60.133.106 Universal Small Fragment Shoulder/Clavicle Anatomy Tray. Affix “S” to the end of the part number to obtain part number for sterile packaged implant.

Additional plates may be available from the plate families above, but are not configured in the Universal Small Fragment Shoulder/Clavicle Anatomy Tray. Please check for product availability either in non-sterile or sterile packaging using the latest product catalog.

Elbow Anatomy Tray

LCP and VA LCP, Stainless Steel and Titanium

Graphic Case



60.133.105	Universal Small Fragment Elbow Anatomy Tray
60.133.109	Tray Lid 3/3 Width

Implants

3.5 mm LCP Extra-articular Distal Humerus Plate

Stainless Steel	Titanium	Holes	Length	Detail
02.104.006	04.104.006	6	158 mm	Right
02.104.026	04.104.026	6	158 mm	Left
02.104.008	04.104.008	8	194 mm	Right
02.104.028	04.104.028	8	194 mm	Left
02.104.010	04.104.010	10	230 mm	Right
02.104.030	04.104.030	10	230 mm	Left

3.5 mm LCP Hook Plate

Stainless Steel	Titanium	Holes	Length
02.113.103	04.113.103	3	62 mm

2.7 mm/3.5 mm VA LCP Posterolateral Distal Humerus Plate

Stainless Steel	Titanium	Holes	Length	Detail
02.117.203	04.117.203	3	75 mm	Right, short
02.117.303	04.117.303	3	75 mm	Left, short
02.117.204	04.117.204	4	88 mm	Right, medium
02.117.304	04.117.304	4	88 mm	Left, medium
02.117.207	04.117.207	7	127 mm	Right, long
02.117.307	04.117.307	7	127 mm	Left, long

2.7 mm/3.5 mm VA LCP Posterolateral Distal Humerus Plate with Lateral Support

Stainless Steel	Titanium	Holes	Length	Detail
02.117.003	04.117.003	3	75 mm	Right, short
02.117.103	04.117.103	3	75 mm	Left, short
02.117.004	04.117.004	4	88 mm	Right, medium
02.117.104	04.117.104	4	88 mm	Left, medium

2.7 mm/3.5 mm VA LCP Lateral Distal Humerus Plate

Stainless Steel	Titanium	Holes	Length	Detail
02.117.801	04.117.801	1	69 mm	Right, short
02.117.901	04.117.901	1	69 mm	Left, short
02.117.802	04.117.802	2	82 mm	Right, medium
02.117.902	04.117.902	2	82 mm	Left, medium

2.7 mm/3.5 mm VA LCP Medial Distal Humerus Plate

Stainless Steel	Titanium	Holes	Length	Detail
02.117.401	04.117.401	1	69 mm	Right, short
02.117.501	04.117.501	1	69 mm	Left, short
02.117.402	04.117.402	2	82 mm	Right, medium
02.117.502	04.117.502	2	82 mm	Left, medium
02.117.404	04.117.404	4	108 mm	Right, long
02.117.504	04.117.504	4	108 mm	Left, long

2.7 mm/3.5 mm VA LCP Extended Medial Distal Humerus Plate

Stainless Steel	Titanium	Holes	Length	Detail
02.117.601	04.117.601	1	72 mm	Right, short
02.117.701	04.117.701	1	72 mm	Left, short
02.117.602	04.117.602	2	85 mm	Right, medium
02.117.702	04.117.702	2	85 mm	Left, medium
02.117.604	04.117.604	4	111 mm	Right, long
02.117.704	04.117.704	4	111 mm	Left, long

2.7 mm/3.5 mm VA LCP Proximal Olecranon Plate

Stainless Steel	Titanium	Holes	Length	Detail
02.107.002	04.107.002	2	73 mm	Right
02.107.102	04.107.102	2	73 mm	Left

2.7 mm/3.5 mm VA LCP Olecranon Plate

Stainless Steel	Titanium	Holes	Length	Detail
02.107.202	04.107.202	2	90 mm	Right
02.107.302	04.107.302	2	90 mm	Left
02.107.204	04.107.204	4	116 mm	Right
02.107.304	04.107.304	4	116 mm	Left
02.107.206	04.107.206	6	142 mm	Right
02.107.306	04.107.306	6	142 mm	Left

Plates configured for 60.133.105 Universal Small Fragment Elbow Anatomy Tray. Affix “S” to the end of the part number to obtain part number for sterile packaged implant.

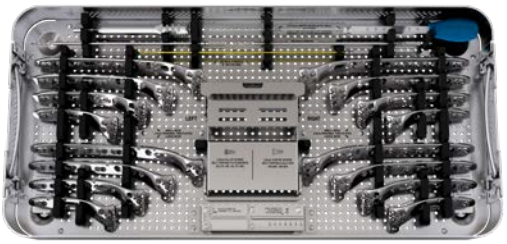
Additional plates may be available from the plate families above, but are not configured in the Universal Small Fragment Elbow Anatomy Tray. Please check for product availability either in non-sterile or sterile packaging using the latest product catalog.

VA LCP Proximal Tibia Anatomy Tray

VA LCP, Stainless Steel

Graphic Case

60.133.107	Universal Small Fragment VA LCP Proximal Tibia Anatomy Tray
60.133.109	Tray Lid 3/3 Width



Instrument

03.133.081	2.7/3.5 mm Depth Gauge 40 to 100 mm

Implants

3.5 mm VA LCP Proximal Tibia Plate, Small Bend

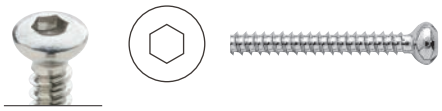
Stainless Steel	Holes	Length	Detail
02.127.210	4	87 mm	Right
02.127.211	4	87 mm	Left
02.127.220	6	117 mm	Right
02.127.221	6	117 mm	Left
02.127.230	8	147 mm	Right
02.127.231	8	147 mm	Left
02.127.240	10	177 mm	Right
02.127.241	10	177 mm	Left

3.5 mm VA LCP Proximal Tibia Plate, Large Bend

Stainless Steel	Holes	Length	Detail
02.127.310	4	87 mm	Right
02.127.311	4	87 mm	Left
02.127.320	6	117 mm	Right
02.127.321	6	117 mm	Left
02.127.330	8	147 mm	Right
02.127.331	8	147 mm	Left
02.127.340	10	177 mm	Right
02.127.341	10	177 mm	Left

3.5 mm Cortex Screws, Self-Tapping

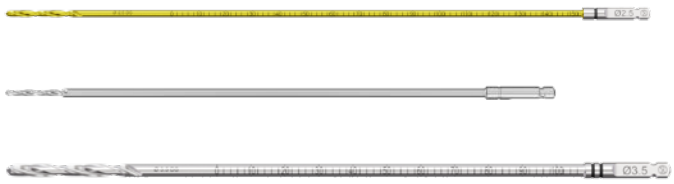
Stainless Steel	Length
204.865	65 mm
204.870	70 mm
204.875	75 mm
204.880	80 mm
204.885	85 mm
204.890	90 mm



3.5 mm Variable Angle Locking Screws, Self-Tapping, T15 STARDRIVE

Stainless Steel	Length
02.127.165	65 mm
02.127.170	70 mm
02.127.175	75 mm
02.127.180	80 mm
02.127.185	85 mm
02.127.190	90 mm

Drill Bits	Diameter	Length
03.133.104	2.5 mm/QC	240 mm, 150 mm Calibration
03.133.108	2.8 mm/QC	200 mm, 110 mm Calibration
03.133.110	3.5 mm/QC	195 mm (no calibration)



Plates configured for 60.133.107 Universal Small Fragment VA LCP Proximal Tibia Anatomy Tray. Affix “S” to the end of the part number to obtain part number for sterile packaged implant.

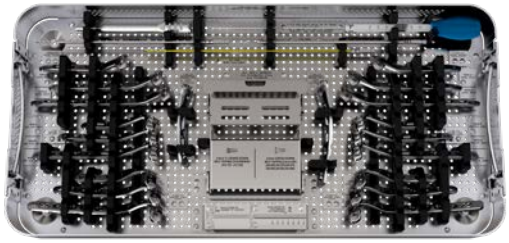
Additional plates and screws may be available from the plate families above, but are not configured in the Universal Small Fragment VA LCP Proximal Tibia Anatomy Tray. Please check for product availability either in non-sterile or sterile packaging using the latest product catalog.

LCP Proximal Tibia Anatomy Tray

LCP, Stainless Steel and Titanium

Graphic Case

60.133.131	Universal Small Fragment LCP Proximal Tibia Anatomy Tray
60.133.109	Tray Lid 3/3 Width



Instrument

03.133.081	2.7/3.5 mm Depth Gauge 40 to 100 mm

Implants

3.5 mm LCP Proximal Tibia Plate

Stainless Steel	Titanium	Holes	Length	Detail
239.934	439.934	4	81 mm	Right
239.935	439.935	4	81 mm	Left
239.936	439.936	6	107 mm	Right
239.937	439.937	6	107 mm	Left
239.938	439.938	8	133 mm	Right
239.939	439.939	8	133 mm	Left

3.5 mm LCP Medial Proximal Tibia Plate

Stainless Steel	Titanium	Holes	Length	Detail
239.954	439.954	4	93 mm	Right
239.955	439.955	4	93 mm	Left
239.956	439.956	6	119 mm	Right
239.957	439.957	6	119 mm	Left
239.958	439.958	8	145 mm	Right
239.959	439.959	8	145 mm	Left

3.5 mm LCP Proximal Tibia Plate Low Bend

Stainless Steel	Titanium	Holes	Length	Detail
02.124.200	04.124.200	4	76 mm	Right
02.124.201	04.124.201	4	76 mm	Left
02.124.204	04.124.204	6	102 mm	Right
02.124.205	04.124.205	6	102 mm	Left
02.124.208	04.124.208	8	128 mm	Right
02.124.209	04.124.209	8	128 mm	Left

3.5 mm LCP Posteromedial Proximal Tibia Plate

Stainless Steel	Titanium	Holes	Length
02.120.702	04.120.702	2	79 mm
02.120.704	04.120.704	4	105 mm

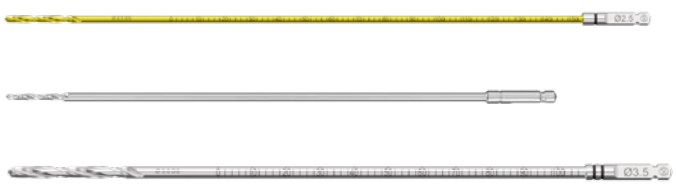
3.5 mm Cortex Screws, Self-Tapping

Stainless Steel	Titanium	Length
204.865S	404.865S	65 mm
204.870S	404.870S	70 mm
204.875S	404.875S	75 mm
204.880S	404.880S	80 mm
204.885S	404.885S	85 mm
204.890S	404.890S	90 mm

3.5 mm Locking Screws, Self-Tapping, with STARDRIVE Recess

Stainless Steel	Titanium	Length
212.125	412.125	65 mm
212.126	412.126	70 mm
212.127	412.127	75 mm
212.128	412.128	80 mm
212.129	412.129	85 mm
212.130	412.130	90 mm

Drill Bits	Diameter	Length
03.133.104	2.5 mm/QC	240 mm, 150 mm Calibration
03.133.108	2.8 mm/QC	200 mm, 110 mm Calibration
03.133.110	3.5 mm/QC	195 mm (no calibration)



Plates configured for 60.133.131 Universal Small Fragment LCP Proximal Tibia Anatomy Tray. Affix “S” to the end of the part number to obtain part number for sterile packaged implant.

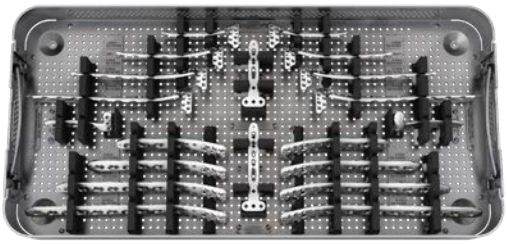
Additional plates may be available from the plate families above, but are not configured in the Universal Small Fragment LCP Proximal Tibia Anatomy Tray. Please check for product availability either in non-sterile or sterile packaging using the latest product catalog.

VA LCP Distal Tibia Anatomy Tray

VA LCP, Stainless Steel

Graphic Case

60.133.108	Universal Small Fragment VA LCP Distal Tibia Anatomy Tray
60.133.109	Tray Lid 3/3 Width



Implants

2.7 mm/3.5 mm VA LCP Medial Distal Tibia Plate

Stainless Steel	Holes	Length	Detail
02.118.002	4	112 mm	Right
02.118.003	4	112 mm	Left
02.118.004	6	142 mm	Right
02.118.005	6	142 mm	Left
02.118.006	8	172 mm	Right
02.118.007	8	172 mm	Left
02.118.008	10	202 mm	Right
02.118.009	10	202 mm	Left

2.7 mm/3.5 mm VA LCP Anterolateral Distal Tibia Plate

Stainless Steel	Holes	Length	Detail
02.118.202	4	82 mm	Right
02.118.203	4	82 mm	Left
02.118.204	6	112 mm	Right
02.118.205	6	112 mm	Left
02.118.206	8	142 mm	Right
02.118.207	8	142 mm	Left
02.118.208	10	172 mm	Right
02.118.209	10	172 mm	Left

2.7 mm/3.5 mm VA LCP Distal Tibia L-Plate

Stainless Steel	Holes	length	Detail
02.118.302	4	72 mm	Right
02.118.303	4	72 mm	Left

2.7 mm/3.5 mm VA LCP Distal Tibia T-Plate

Stainless Steel	Holes	Length
02.118.306	4	72 mm
02.118.307	6	90 mm

Plates configured for 60.133.108 Universal Small Fragment VA LCP Distal Tibia Anatomy Tray. Affix “S” to the end of the part number to obtain part number for sterile packaged implant.

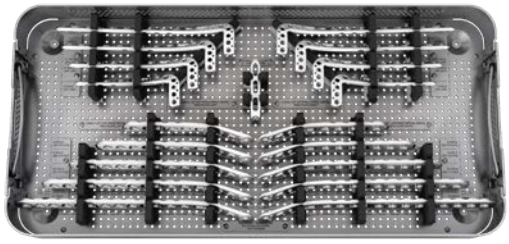
Additional plates may be available from the plate families above, but are not configured in the Universal Small Fragment VA LCP Distal Tibia Anatomy Tray. Please check for product availability either in non-sterile or sterile packaging using the latest product catalog.

LCP Distal Tibia Anatomy Tray

LCP, Stainless Steel and Titanium

Graphic Case

60.133.112	Universal Small Fragment LCP Distal Tibia Anatomy Tray
60.133.109	Tray Lid 3/3 Width



Implants

3.5 mm LCP Anterolateral Distal Tibia Plate

Stainless Steel	Titanium	Holes	Length	Detail
241.442	441.442	7	106 mm	Right
241.443	441.443	7	106 mm	Left
241.444	441.444	9	132 mm	Right
241.445	441.445	9	132 mm	Left
241.446	441.446	11	158 mm	Right
241.447	441.447	11	158 mm	Left
241.448	441.448	13	184 mm	Right
241.449	441.449	13	184 mm	Left

3.5 mm LCP Hook Plate

Stainless Steel	Titanium	Holes	Length
02.113.103	04.113.103	3	62 mm

3.5 mm LCP Medial Distal Tibia Plate Low Bend

Stainless Steel	Titanium	Holes	Length	Detail
02.112.514	04.112.514	6	135 mm	Right
02.112.515	04.112.515	6	135 mm	Left
02.112.518	04.112.518	8	161 mm	Right
02.112.519	04.112.519	8	161 mm	Left
02.112.522	04.112.522	10	187 mm	Right
02.112.523	04.112.523	10	187 mm	Left
02.112.526	04.112.526	12	213 mm	Right
02.112.527	04.112.527	12	213 mm	Left
02.112.530	04.112.530	14	239 mm	Right
02.112.531	04.112.531	14	239 mm	Left

Plates configured for 60.133.112 Universal Small Fragment LCP Distal Tibia Anatomy Tray. Affix “S” to the end of the part number to obtain part number for sterile packaged implant.

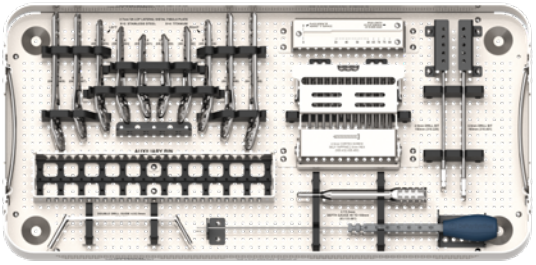
Additional plates may be available from the plate families above, but are not configured in the Universal Small Fragment LCP Distal Tibia Anatomy Tray. Please check for product availability either in non-sterile or sterile packaging using the latest product catalog.

VA LCP Distal Fibula Plates with 4.0 mm Cortex Screws and Instruments Tray

VA LCP, Stainless Steel and Titanium

Graphic Case

60.133.500	USF VA LCP Distal Fibula Tray with 4.0 mm Screw Rack
60.133.109	Tray Lid 1/1 Width



Implants

2.7 mm VA LCP Lateral Distal Fibula Plate

Stainless Steel	Titanium	Holes	Length	Detail
02.118.400	04.118.400	3	79 mm	Right
02.118.401	04.118.401	3	79 mm	Left
02.118.402	04.118.402	4	92 mm	Right
02.118.403	04.118.403	4	92 mm	Left
02.118.404	04.118.404	5	105 mm	Right
02.118.405	04.118.405	5	105 mm	Left
02.118.406	04.118.406	6	118 mm	Right
02.118.407	04.118.407	6	118 mm	Left
02.118.408	04.118.408	7	131 mm	Right
02.118.409	04.118.409	7	131 mm	Left

Plates configured for 60.133.500 Universal Small Fragment VA LCP Distal Fibula Plates with 4.0 mm Cortex Screws and Instruments Tray. Affix “S” to the end of the part number to obtain part number for sterile packaged implant.

Additional plates may be available from the plate families above, but are not configured in the Universal Small Fragment VA LCP Distal Fibula Plates with 4.0 mm Cortex Screws and Instruments Tray. Please check for product availability either in non-sterile or sterile packaging using the latest product catalog.

4.0 mm Cortex Screws

Stainless Steel	Titanium	Length
206.432	406.432	32 mm
206.434	406.434	34 mm
206.436	406.436	36 mm
206.438	406.438	38 mm
206.440	406.440	40 mm
206.442	406.442	42 mm
206.444	406.444	44 mm
206.446	406.446	46 mm
206.448	406.448	48 mm
206.450	406.450	50 mm
206.452	406.452	52 mm
206.454	406.454	54 mm
206.456	406.456	56 mm
206.458	406.458	58 mm
206.460	406.460	60 mm
206.465	406.465	65 mm
206.470	406.470	70 mm
206.475	406.475	75 mm
206.480	406.480	80 mm

Instruments

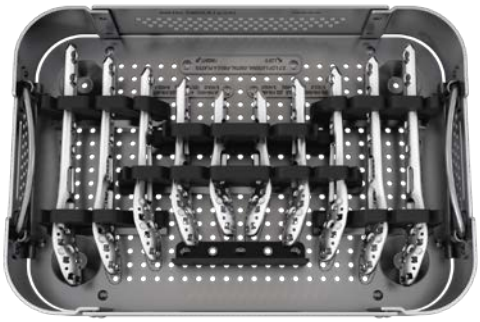
312.401	Double Drill Guide 4.0 mm/2.9 mm
310.401	Drill Bit Ø 4.0 mm, length 160 mm
310.229	Drill Bit Ø 2.9 mm, length 150 mm
03.133.081	Depth Gauge 2.7/3.5mm, 40 to 100mm

VA LCP Distal Fibula Anatomy Tray

VA LCP, Stainless Steel and Titanium

Graphic Case

60.133.132	Universal Small Fragment VA LCP Distal Fibula Anatomy Tray
60.133.111	Tray Lid 1/3 Width



Implants

2.7 mm VA LCP Lateral Distal Fibula Plate

Stainless Steel	Titanium	Holes	Length	Detail
02.118.400	04.118.400	3	79 mm	Right
02.118.401	04.118.401	3	79 mm	Left
02.118.402	04.118.402	4	92 mm	Right
02.118.403	04.118.403	4	92 mm	Left
02.118.404	04.118.404	5	105 mm	Right
02.118.405	04.118.405	5	105 mm	Left
02.118.406	04.118.406	6	118 mm	Right
02.118.407	04.118.407	6	118 mm	Left
02.118.408	04.118.408	7	131 mm	Right
02.118.409	04.118.409	7	131 mm	Left

Plates configured for 60.133.132 Universal Small Fragment VA LCP Distal Fibula Anatomy Tray. Affix “S” to the end of the part number to obtain part number for sterile packaged implant.

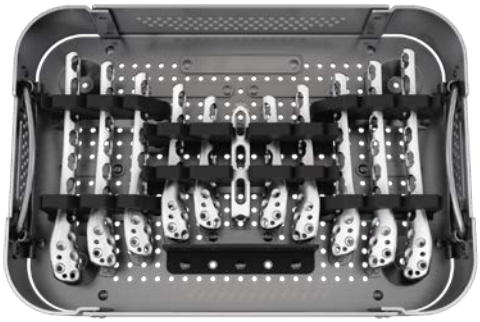
Additional plates may be available from the plate families above, but are not configured in the Universal Small Fragment VA LCP Distal Fibula Anatomy Tray. Please check for product availability either in non-sterile or sterile packaging using the latest product catalog.

LCP Distal Fibula Anatomy Tray

LCP, Stainless Steel and Titanium

Graphic Case

60.133.133	Universal Small Fragment LCP Distal Fibula Anatomy Tray
60.133.111	Tray Lid 1/3 Width



Implants

2.7 mm/3.5 mm LCP Lateral Distal Fibula Plate

Stainless Steel	Titanium	Holes	Length	Detail
02.112.136	04.112.136	3	73 mm	Right
02.112.137	04.112.137	3	73 mm	Left
02.112.138	04.112.138	4	86 mm	Right
02.112.139	04.112.139	4	86 mm	Left
02.112.140	04.112.140	5	99 mm	Right
02.112.141	04.112.141	5	99 mm	Left
02.112.142	04.112.142	6	112 mm	Right
02.112.143	04.112.143	6	112 mm	Left
02.112.144	04.112.144	7	125 mm	Right
02.112.145	04.112.145	7	125 mm	Left

3.5 mm LCP Hook Plate

Stainless Steel	Titanium	Holes	Length
02.113.103	04.113.103	3	62 mm

Plates configured for 60.133.133 Universal Small Fragment LCP Distal Fibula Anatomy Tray. Affix “S” to the end of the part number to obtain part number for sterile packaged implant.

Additional plates may be available from the plate families above, but are not configured in the Universal Small Fragment LCP Distal Fibula Anatomy Tray. Please check for product availability either in non-sterile or sterile packaging using the latest product catalog.

Instruments

292.120.01	1.25 mm Kirschner Wire with Trocar Point 150 mm	
292.160.01	1.6 mm Kirschner Wire with Trocar Point 150 mm	
292.200.01	2.0 mm Kirschner Wire with Trocar Point 150 mm	
310.890	Countersink for 3.5 mm Cortex and 4.0 mm Cancellous Bone Screws	
314.060	Holding Sleeve	
314.116	STARDRIVE™ Screwdriver Shaft Quick Coupling/T15	
314.467	STARDRIVE™ Screwdriver Shaft T8 105 mm	
319.391	Sharp Hook-Small Taper	

398.400	Reduction Forceps with Points Narrow-Ratchet 132 mm	
398.410	Reduction Forceps with Points Broad-Ratchet	
399.190	Small Hohmann Retractor 8 mm Short Narrow Tip 160 mm	
399.490	Hohmann Retractor 15 mm 160 mm	
399.990	Reduction Forceps with Serrated Jaw-Ratchet 144 mm	
399.780	Reduction Forceps, large, with Points	

511.773	Torque Limiting Attachment 1.5 Nm with Quick Coupling	
511.776	Torque Limiting Attachment 0.8 Nm with Quick Coupling	
03.110.002	Torque Limiting Attachment 1.2 Nm with Quick Coupling	
03.127.016	2.5 Nm Torque Limiting Handle with Quick Coupling	
03.133.001	3.5 mm Neutral Sleeve Adapter for 3.5 Non-Locking Drill Guide	
03.133.002	3.5 mm Non-Locking Drill Guide	
03.133.003	3.5 mm Variable Angle Drill Guide	

03.133.004	2.8 mm Threaded Guide for 3.5 mm Screw, VA and LCP	
03.133.005	2.7 mm Neutral Sleeve Adapter for 2.7 Non-Locking Drill Guide	
03.133.006	2.7 mm Non-Locking Drill Guide	
03.133.007	2.7 mm Variable Angle Drill Guide	
03.133.008	2.0 mm Threaded Guide for 2.7 mm Screw, VA and LCP	
03.133.080	2.7/3.5 mm Depth Gauge 0 to 60 mm	
03.133.081	2.7/3.5 mm Depth Gauge 40 to 100 mm	

03.133.100	2.0 mm Drill Bit/Quick Coupling 110 mm, 30 mm Calibration	
03.133.101	2.0 mm Drill Bit/Quick Coupling 140 mm, 60 mm Calibration	
03.133.102	2.5 mm Drill Bit/Quick Coupling 135 mm, 45 mm Calibration	
03.133.103	2.5 mm Drill Bit/Quick Coupling 170 mm, 80 mm Calibration	
03.133.104	2.5 mm Drill Bit/Quick Coupling 240 mm, 150 mm Calibration	
03.133.105	2.7 mm Drill Bit/Quick Coupling 125 mm	
03.133.106	2.8 mm Drill Bit/Quick Coupling 135 mm, 45 mm Calibration	
03.133.107	2.8 mm Drill Bit/Quick Coupling 170 mm, 80 mm Calibration	
03.133.108	2.8 mm Drill Bit/Quick Coupling 200 mm, 110 mm Calibration	

03.133.109	3.5 mm Drill Bit/Quick Coupling 150 mm	
03.133.110	3.5 mm Drill Bit/Quick Coupling 195 mm	
03.133.150	Universal Screwdriver Handle	
03.133.175	2.5 mm Hex Driver Shaft, Self-Retaining Length 100 mm with Quick Coupling	
03.133.200	Plate Bending Iron Closed for 2.7/3.5 mm Plates	
03.133.201	Plate Bending Iron Open for 2.7/3.5 mm Plates	
03.133.202	Periosteal Elevator 6 mm Curved Blade	
312.401	Double Drill Guide 4.0 mm/2.9 mm	
310.401	Drill Bit ∅ 4.0 mm, length 160 mm	
310.229	Drill Bit ∅ 2.9 mm, length 150 mm	

Drill bits are available in both non-sterile and sterile packaging. To determine part number for the sterile-packaged drill bit, affix “S” to the end of the part number.

Sterile Packaged Instruments

Drill Bits

Part Number	Description
03.133.100S	2.0 mm Drill Bit/Quick Coupling, Length 110 mm, 30 mm Calibration, Sterile
03.133.101S	2.0 mm Drill Bit/Quick Coupling, Length 140 mm, 60 mm Calibration, Sterile
03.133.102S	2.5 mm Drill Bit/Quick Coupling, Length 135 mm, 45 mm Calibration, Sterile
03.133.103S	2.5 mm Drill Bit/Quick Coupling, Length 170 mm, 80 mm Calibration, Sterile
03.133.104S	2.5 mm Drill Bit/Quick Coupling, Length 240 mm, 150 mm Calibration, Sterile
03.133.105S	2.7 mm Drill Bit/Quick Coupling, Length 125 mm, Sterile
03.133.106S	2.8 mm Drill Bit/Quick Coupling, Length 135 mm, 45 mm Calibration, Sterile
03.133.107S	2.8 mm Drill Bit/Quick Coupling, Length 170 mm, 80 mm Calibration, Sterile
03.133.108S	2.8 mm Drill Bit/Quick Coupling, Length 200 mm, 110 mm Calibration, Sterile
03.133.109S	3.5 mm Drill Bit/Quick Coupling, Length 150 mm, Sterile
03.133.110S	3.5 mm Drill Bit/Quick Coupling, Length 195 mm, Sterile

Supported Plating Systems

Reference to Surgical Technique Guides for existing plating systems supported by the Universal Small Fragment System

General

Literature
3.5 mm Curved Locking Compression Plates (LCP) Technique Guide
3.5 mm LCP Hook Plate Technique Guide
Small Fragment Locking Compression Plate (LCP) System Technique Guide
Modular Mini Fragment LCP – 2.7 mm Plating System Technique Guide
LCP Metaphyseal Plate Technique Guide

Shoulder/Clavicle

Literature
2.7 mm/3.5 mm VA LCP Anterior Clavicle Plate Technique Guide
3.5 mm LCP Superior and Superior Anterior Clavicle Plates Technique Guide
3.5 mm LCP Clavicle Hook Plates Technique Guide
3.5 mm LCP Periarticular Proximal Humerus Plate Technique Guide
3.5 mm LCP Proximal Humerus Plates Technique Guide

Elbow

Literature
3.5 mm LCP Distal Humerus Plates Technique Guide
3.5 mm LCP Extra-articular Distal Humerus Plate Technique Guide
3.5 mm LCP Hook Plate Technique Guide
3.5 mm LCP Olecranon Plates Technique Guide
2.7 mm/3.5 mm VA LCP Elbow System Technique Guide

Proximal Tibia

Literature
3.5 mm LCP Medial Proximal Tibia Plates Technique Guide
3.5 mm LCP Posteromedial Proximal Tibia Plate Technique Guide
3.5 mm LCP Proximal Tibia Plates Technique Guide
3.5 mm VA LCP Proximal Tibia Plate System Technique Guide

Distal Tibia and Fibula

Literature
2.7 mm/3.5 mm VA LCP Ankle Trauma System Technique Guide
2.7 mm/3.5 mm LCP Distal Fibula Plates Technique Guide
3.5 mm LCP Anterolateral Distal Tibia Plates Technique Guide
3.5 mm LCP Distal Tibia T-Plates Technique Guide
3.5 mm LCP Hook Plate Technique Guide
3.5 mm LCP Medial Distal Tibia Plates Technique Guide
3.5 mm LCP Low Bend Medial Distal Tibia Plates Technique Guide

Instrument Cross Reference

Compatibility List

Previously designed instruments are compatible with instruments in the Universal Small Fragment System and may be used with the system. Below is a listing of instruments evaluated as compatible with instruments in the Universal Small Fragment System.

Drill Bits

Diameter	P/N	Overall Length (mm)	Shaft Length (mm)	Universal Small Fragment P/N	Overall Length (mm)	Shaft Length (mm)	Calibrated Length (mm)
2.0 mm	310.190	100	75	03.133.100	110	85	30
	310.210	125	100	03.133.101	140	115	60
	310.534	110	85				
	315.190	100	75				
	315.210	125	100				
	323.062	140	115				
2.5 mm	310.230	180	155	03.133.102	135	110	45
	310.250	110	85	03.133.103	170	145	80
	315.230	180	155	03.133.104	240	215	150
	315.250	110	85				
2.7 mm	310.260	100	75	03.133.105	125	100	—
	310.280	125	100				
	315.260	110	75				
	315.280	125	100				
2.8 mm	310.288	165	135	03.133.106	135	110	45
				03.133.107	170	145	80
				03.133.108	200	175	110
3.5 mm	310.350	110	85	03.133.109	150	125	—
	310.370	195	170	03.133.110	195	170	—
	315.050	225	200				

▲ Precaution:

Calibrated drill bits not listed above are not designed to measure with the Universal Small Fragment Drill Guides and may lead to inaccurate depth readings.

Depth Gauge

Existing P/N	Universal Small Fragment P/N	Universal Small Fragment Description
319.010	03.133.080	2.7/3.5 mm Depth Gauge 0 to 60 mm
319.090	03.133.081	2.7/3.5 mm Depth Gauge 40 to 100 mm

Drill Guides

Existing US P/N	Universal Small Fragment P/N	Universal Small Fragment Description
323.260	03.133.005	2.7 mm Neutral Sleeve Adapter for 2.7 Non-locking Drill Guide
	03.133.006	2.7 mm Non-locking Drill Guide
312.240	03.133.006	2.7 mm Non-locking Drill Guide
323.360	03.133.001	3.5 mm Neutral Sleeve Adapter for 3.5 Non-locking Drill Guide
	03.133.002	3.5 mm Non-locking Drill Guide
03.211.004	03.133.008	2.0 mm Threaded Guide for 2.7 mm Screw, VA and LCP
312.648	03.133.004	2.8 mm Threaded Guide for 3.5 mm Screw, VA and LCP
03.127.001	03.133.004	2.8 mm Threaded Guide for 3.5 mm Screw, VA and LCP
03.211.002	03.133.007	2.7 mm Variable Angle Drill Guide
	03.133.008	2.0 mm Threaded Guide for 2.7 mm Screw, VA and LCP
03.211.003	03.133.007	2.7 mm Variable Angle Drill Guide
03.127.002	03.133.003	3.5 mm Variable Angle Drill Guide
	03.133.004	2.8 mm Threaded Guide for 3.5 mm Screw, VA and LCP
03.127.004	03.133.003	3.5 mm Variable Angle Drill Guide
03.127.005		
03.127.006		

Plate Bending Irons

Existing P/N	Universal Small Fragment P/N	Universal Small Fragment Description
329.040	03.133.200	Plate Bending Iron Closed for 2.7/3.5 mm Plates
	03.133.201	Plate Bending Iron Open for 2.7/3.5 mm Plates
329.050	03.133.200	Plate Bending Iron Closed for 2.7/3.5 mm Plates
	03.133.201	Plate Bending Iron Open for 2.7/3.5 mm Plates
329.070	03.133.200	Plate Bending Iron Closed for 2.7/3.5 mm Plates
	03.133.201	Plate Bending Iron Open for 2.7/3.5 mm Plates

Screwdrivers

Existing P/N	Universal Small Fragment P/N	Universal Small Fragment Description
314.030	03.133.175	2.5 mm Hex Driver Shaft, Self-Retaining Length 100 mm with Quick Coupling
311.430	03.133.150	Universal Screwdriver Handle
314.020	03.133.175	2.5 mm Hex Driver Shaft, Self-Retaining Length 100 mm with Quick Coupling
	03.133.150	Universal Screwdriver Handle
314.115	314.116	STARDRIVE™ Screwdriver T15
	03.133.150	Universal Screwdriver Handle

Periosteal Elevator

Existing P/N	Universal Small Fragment P/N	Universal Small Fragment Description
399.360	03.133.202	Periosteal Elevator 6 mm Curved Blade

Not all products are currently available in all markets.
This publication is not intended for distribution in the USA.
Intended use, Indications and Contraindications can be found in the corresponding system Instructions for Use.
All Surgical Techniques are available as PDF files at www.depuysynthes.com/ifu

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