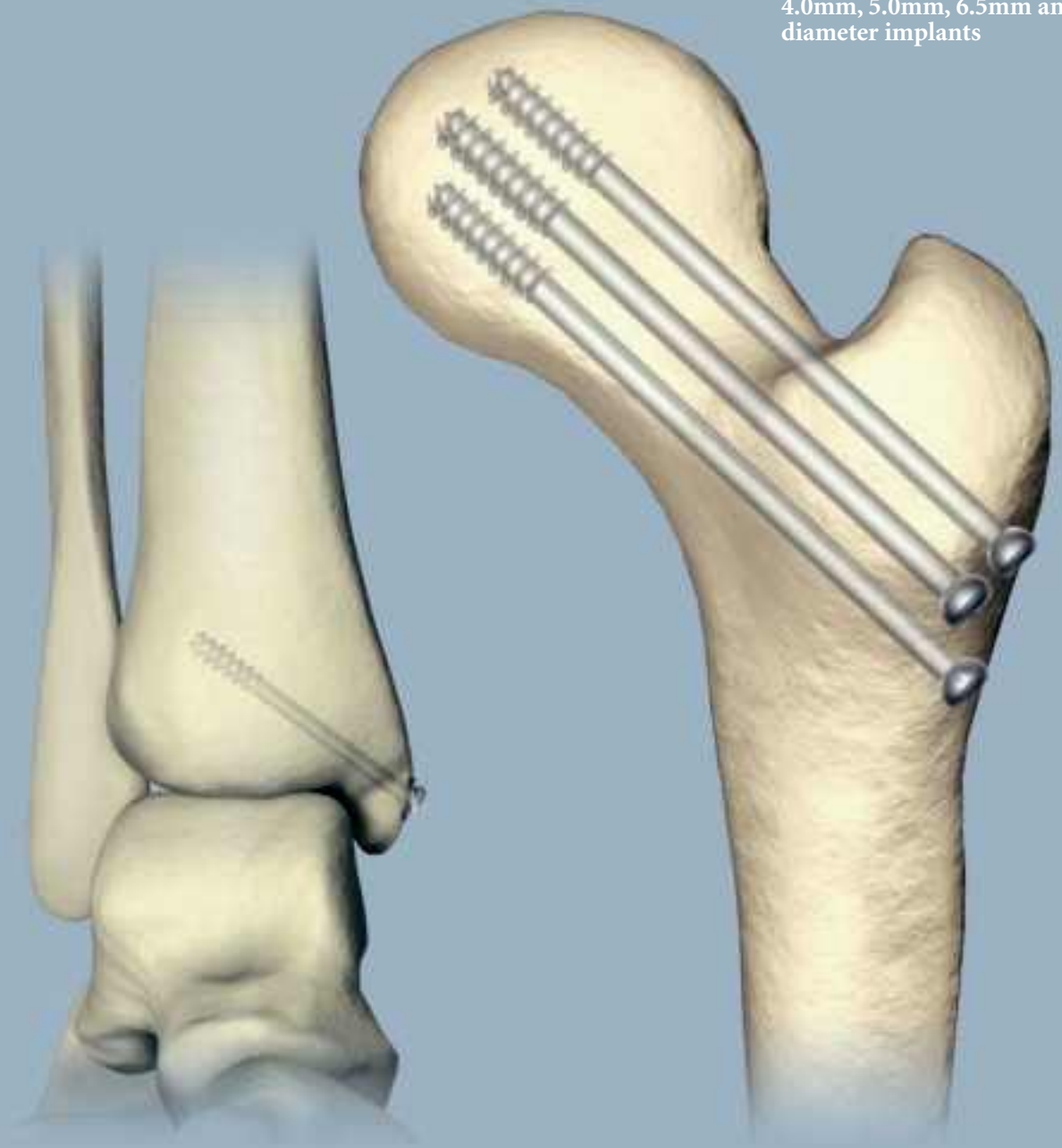
stryker

Trauma

Asnis™ III
Cannulated Screw System

Operative Technique

4.0mm, 5.0mm, 6.5mm and 8.0mm diameter implants



Contents

This publication sets forth detailed recommended procedures for using Stryker Trauma devices and instruments. It offers guidance that you should heed, but, as with any such technical guide, each surgeon must consider the particular needs of each patient and make appropriate adjustments when and as required. A workshop training is required prior to first surgery.

Note: All bone screws referenced in this material here are not approved for screw attachment or fixation to the posterior elements (pedicles) of the cervical, thoracic or lumbar spine.

Introduction

"For the last decade, cannulated screws have crept quietly into a place of prominence and utility in contemporary orthopaedic surgery. Despite their pivotal role as an adjunct to the new minimally invasive surgery, they have not been formally recognized as have their cousins-the plate, intramedullary nail, and external fixator.

Dr Stanley E. Asnis pioneered the development of cannulated screws for the fixation of femoral neck fractures in the early 1980's and has worked steadily to expand the indications and perfect the technique for their use.

Along with the arthroscope and image intensifier, the cannulated screw has been a major facilitator of minimally invasive surgery. In the past, screw fixation of fractures usually required extensive surgical exposure of bone fragments and substantial soft tissue stripping. This resulted in increased postoperative pain and a greater risk of infection and non-union.

Continued improvement in image intensification and development by manufacturers of a wide array of cannulated screws has permitted many fractures that previously required open surgery to be fixed percutaneously. Reduction of fractures can be achieved with radiographic control and provisionally fixed with the cannulated screw guide wire. Because the cannulated screw is inserted over the guide wire, the surface area of bone that must be stripped of soft tissue need only be slightly larger than the diameter of the screw." [1]

[1]Browner, Bruce D. M.D. (1996). Introduction. In: Asnis, Stanley E. and Kyle, Richard F. (editors). Cannulated Screw Fixation, Principles and Operative Techniques. Springer p. ix

Features & Benefits

The Asnis III Cannulated Screw Systems are designed to optimise surgical outcomes while simplifying procedures. The systems incorporate several features intended to enhance screw placement, insertion and removal.

Low Profile Screw Head

Reduced potential for soft-tissue irritation

Material Choice

Titanium Alloy (TAV)

Increased CT, MRI and Bio-compatibility

Anodizing Type II minimises fretting, increases fatigue strength and notch resistance†

Stainless Steel (316LVM)

Compatibility with current steel systems

Proven clinical history

Packaging Choice

Implants available both sterile and non-sterile

Shaft and Core Diameter Equal

For improved strength

Thread Choice

Implants available with both partial and fully threaded options

Reverse Cutting Flute

To facilitate removal

Self-drilling / tapping design

Efficient cutting tip design for improve operating efficiency

Large diameter Guide Wires

The Asnis III System features larger diameter Guide Wires
Threaded tip engages bone for optimal purchase

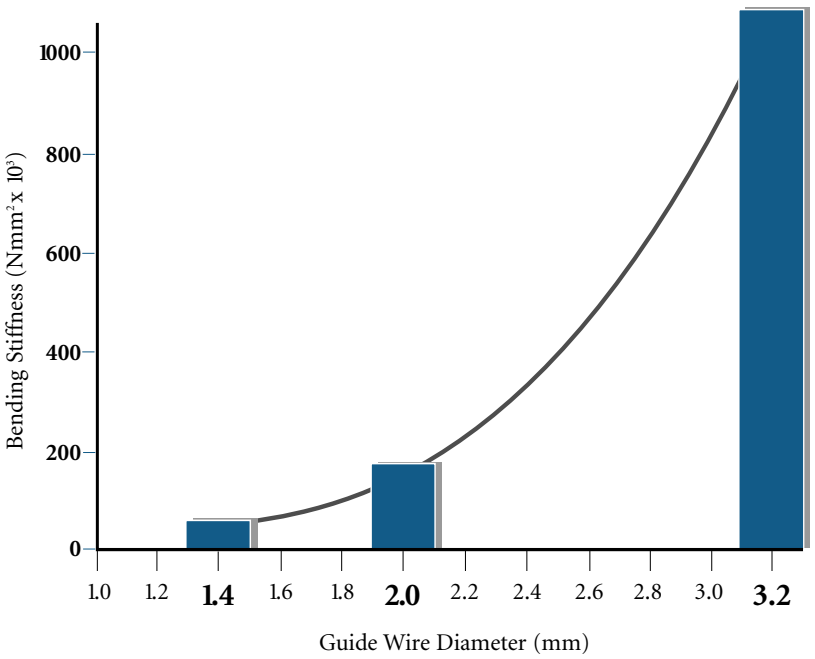
†Data on file at Stryker

Features & Benefits

Large Diameter Guide Wires

The Asnis III Systems feature 3.2mm diameter Guide Wires with tapered core. This design reduces potential for a stress riser at the thread/shank junction. The larger diameter provides greater bending stiffness to reduce deflection. This ensures the most precise screw placement and minimises the risk of pushing the Guide Wire further into the bone than desired.

Chart 1 : Bending stiffness vs Diameter†



Modular Case Design and Elastosil® Handles

The modular case design offers improved aesthetics and better access to the instrumentation thus simplifying the procedure.

The inclusion of Elastosil® Handles ensures maximum surgeon grip.

Screw Range – Titanium and Steel					
	4.0mm	**5.0mm**	**6.5mm**		**8.0mm**
Partial	**1/3rd Thread**	**1/3rd Thread**	**20mm Thread**	**40mm Thread**	**25mm Thread**
	14mm - 50mm* 55mm - 70mm**	20mm - 50mm* 55mm - 80mm**	40mm - 120mm**	55mm - 120mm**	40mm - 120mm**
Full	10mm - 50mm*	20mm - 50mm* 55mm - 70mm**	30mm - 120**		40mm - 120mm**
Guide Wire	Ø1.4mm	Ø2.0mm	Ø3.2mm		Ø3.2mm

* 2mm increments

** 5mm increments

†Data on file at Stryker

Contraindications

The physician's education, training and professional judgment must be relied upon to choose the most appropriate device and treatment option. Conditions presenting an increased risk of failure include:

- Any active or suspected latent infection or marked local inflammation in or about the affected area.
- Compromised vascularity that would inhibit adequate blood supply to the operative site.
- Bone stock compromised by disease, infection or prior implantation that cannot provide adequate support and/or fixation of the devices.
- Material sensitivity documented or suspected.
- Obesity. An overweight or obese patient can produce loads on the implant which can lead to failure of the fixation of the device or to failure of the device itself.
- Patients having inadequate tissue coverage over the operative site.
- Implant utilization that would interfere with anatomical structures or physiological performance.
- Any mental or neuromuscular disorder which could create an unacceptable risk of fixation failure or complications in postoperative care.
- Other medical or surgical conditions which would preclude the potential benefit of surgery.

Surgeons should warn patients about these contraindications and limitations when appropriate.

Additional Information

Options

Tap / Drill - In hard or sclerotic bone, pre-drilling and pre-tapping may be necessary.

Cannulated Screwdriver with AO fitting - This can be used with either the Elastosil® Handle with AO Coupling or a power tool.

If a power tool is selected, final tightening MUST be carried out by hand to prevent stripping.

Cleaning

Care should be taken to utilise the Cleaning Stylet for inter- and post-operative cleaning of cannulations. Correct inter-operative use of this instrument, together with rinsing with saline solution prevents accumulation of debris.

Removal

It is recommended that the Solid Screwdriver be used for Screw removal. This can apply greater torque and will reduce the potential for damaging the hexagonal tip on the Screwdriver.

Single Use Items

Important Note:

Guide Wires are not intended for re-use. They are single use only. Guide Wires may be damaged or bent during surgical procedures. If a Guide Wire is re-used, it may become lodged in the drill and could be advanced into the pelvis, damaging large blood vessels or vital organs.

Publications

Cannulated Screw Fixation, Principles and Operative Techniques.

Stanley E. Asnis M.D. (editor)
Richard F. Kyle M.D. (editor)

ISBN 0-387-94463-X

Operative Technique – 4.0mm

Indications

- Fractures of the tarsals and metatarsals
- Fractures of the olecranon, distal humerus
- Fractures of the radius and ulna
- Patella fractures
- Distal tibia and pilon fractures
- Fractures of the fibula, medial malleolus, os calcis
- Tarso-metatarsal and metatarso-phalangeal arthrodeses
- Metatarsal and phalangeal osteotomies
- Osteochondritis dissecans
- Ligament fixation
- Other small fragment, cancellous bone fractures

Step one

Figure 1

Insert Guide Wire

Using the ø1.4/2.7mm Double Drill Guide, insert a ø1.4x150mm Guide Wire to the appropriate depth. (Figure 1) Use Image Intensification to control reduction and Guide Wire placement. Place additional Guide Wires as necessary. Remove the Double Drill Guide.

Note: In dense bone, puncturing the cortex with the ø1.4x150mm Drill Bit to initiate the Wire may reduce potential heat and/or deflection.

Alternative: Substitute the ø1.4x150mm Guide Wire with a ø1.4x150mm Drill Bit. Throughout the procedure it is possible to interchange the Guide Wire and Drill Bit.

Option: A Parallel Drill Guide is available for parallel placement of Guide Wires.

Countersink Option

Figure 1a

Countersink or Washer?

Where soft tissue coverage is minimal, use of the Countersink to further recess the low profile Screw Head may be beneficial. (Figure 1a) Care should be taken to ensure the Cortex is not countersunk past its capacity.

In osteoporotic bone or where the Cortex is thin, Washers can be applied to spread the load of the Screw Head over a greater area.

Note: The Countersink design does not require pre-drilling.

Operative Technique – 4.0mm

Step two

Figure 2

Measure for Screw Length

Slide the Direct Measuring Gauge over the ø1.4x150mm Guide Wire. (Figure 2) The Direct Measuring Gauge measures direct to the tip of the Guide Wire. This ensures that the final screw position corresponds with the initial tip position of the Guide Wire.

Select appropriate screw length. Length adjustment is particularly important if the tip is near an articular surface.

It is recommended to subtract between 2 - 3mm from the measurement on the Direct Measuring Gauge to avoid the potential penetration of the articular surface.

Note: Care should be taken to ensure the Direct Measuring Gauge tip touches the bone when a reading is taken.

Step three

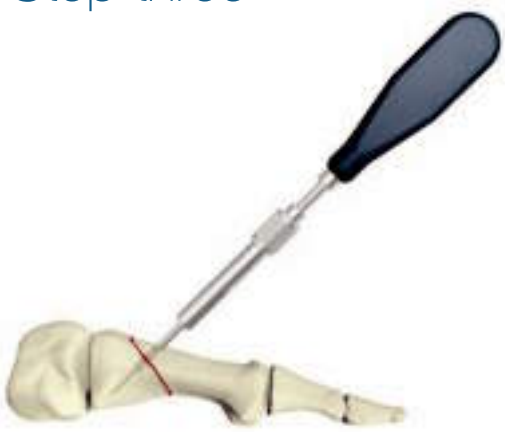


Figure 3

Insert Screw

Using the Cannulated Screwdriver with Elastosil® Handle and the Screw Holding Sleeve, insert the selected screw over the Guide Wire. (Figure 3) Release the Screw Holding Sleeve prior to final tightening.

Remove Screwdriver and Screw Holding Sleeve.

Note: Always verify Guide Wire and Screw position with periodic image intensification.

Step four

Figure 4

Verify Final Reduction

Verify the final position of the Screw.

Remove and discard the Guide Wire.

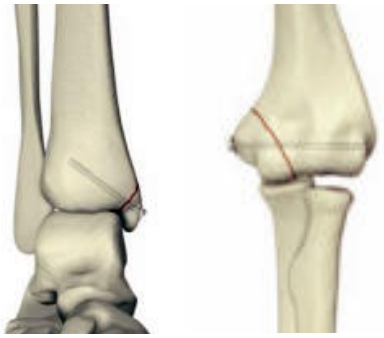
Repeat as necessary for additional screws.

Operative Technique – 5.0mm

Indications

Fixation of intermediate-sized fragments in fractures such as:

- Medial and lateral malleolar and pilon fractures
- Proximal and distal humerus fractures
- Fractures of the olecranon process
- Tibial plateau fractures
- Os calcis, talar and patellar fractures
- Ligament fixation of the proximal humerus
- Arthrodesis of the tarsals



Step one

Figure 1

Insert Guide Wire

Using the ø2.0/3.5mm Double Drill Guide, insert a ø2.0x150mm Guide Wire to the appropriate depth.

Use Image Intensification to control reduction and Guide Wire placement. Place additional Guide Wires as necessary. Remove the Double Drill Guide.

Note: In dense bone, puncturing the cortex with the ø2.0x150mm Drill Bit to initiate the Wire may reduce potential heat and/or deflection.

Alternative: Substitute the ø2.0x150mm Guide Wire with a ø2.0x150mm Drill Bit. Throughout the procedure it is possible to interchange the Guide Wire and Drill Bit.

Option: A Parallel Drill Guide is available for parallel placement of Guide Wires.

Optional

Figure 1a

Countersink or Washer?

Where soft tissue coverage is minimal, use of the Countersink to further recess the low profile screw head may be beneficial. (Figure 1a) Care should be taken to ensure the cortex is not countersunk past its capacity.
In osteoporotic bone or where the cortex is thin, Washers can be applied to spread the load of the screw head over a greater area.

Note: The Countersink design does not require pre-drilling.

Operative Technique – 5.0mm

Step two

Figure 2

Measure for Screw Length

Slide the Direct Measuring Gauge over the ø2.0x150mm Guide Wire. (Figure 2) The Direct Measuring Gauge measures direct to the tip of the Guide Wire. This ensures that the final Screw position corresponds with the initial tip position of the Guide Wire.

Select appropriate Screw length. Length adjustment is particularly important if the tip is near an articular surface.

It is recommended to subtract between 2-3mm from the measurement on the Direct Measuring Gauge to avoid the potential penetration of the articular surface.

Note: Care should be taken to ensure the Direct Measuring Gauge tip engages the bone when a reading is taken.

Step three

Figure 3

Insert Screw

Using the Cannulated Screwdriver with Elastosil® Handle and the Screw Holding Sleeve, insert the selected screw over the Guide Wire. (Figure 3) Release the Screw Holding Sleeve prior to final tightening.

Remove Screwdriver and Screw Holding Sleeve.

Note: Always verify Guide Wire and Screw position with periodic image intensification.

Step four

Figure 4

Verify Final Reduction

Verify the final position of the Screw.

Remove and discard the Guide Wire.

Repeat as necessary for additional screws.

Operative Technique – 6.5/8.0mm

Indications

6.5/8.0mm Indications are as follows:

- Intracapsular fractures of the femoral neck
- Intertrochanteric fractures of the femur (For additional anti-rotational stability when used in conjunction with the Omega 2 compression hip screw)
- Tibial plateau fractures
- Ankle arthrodesis
- Fractures of the dorsal pelvic ring
- Pelvic sacroiliac joint disruptions

The Original Asnis Screw, with over 20 years of clinical history, has been found to be very successful for the treatment of intracapsular hip fractures. The Asnis III Cannulated Screw offers greater simplicity in the procedure. Parallel Guide Pins are placed and the appropriate length cannulated screws are advanced over the guide pins.

A full description of this procedure is presented to give the surgeon many of the subtle details that have been learned in developing cannulated screws for successful intracapsular hip fixation.

The majority of displaced hip fractures can be reduced. The patient is placed in supine position on a fracture table. Traction is then applied when the leg is in neutral flexion, 10° abduction and neutral rotation. After the application of traction, the hip is then internally rotated as far as possible using moderate force then backed off to a position of approximately 20° internal rotation.

The reduction is then confirmed by image intensification. If good alignment but slight distraction of the fracture is present, proceed with the internal fixation and compress the fracture with the compression screws.

If the fracture is not reducible closed and if there is significant comminution of the posterior femoral neck, then the surgeon should consider open reduction or prosthetic replacement.

A 6cm straight lateral incision is made, starting at the flair of the greater trochanter and extending distally. The fascia lata and vastus lateralis are then split in line with the incision.

Step one

Figure 1
Single Guide Wire Insertion

Insert Guide Pin

Using image intensification, a point is selected at, but not below, the level of the lesser trochanter, midway between the anterior and posterior femoral cortices. In patients with dense cortical bone, the lateral femoral cortex can be opened with a 3.2mm drill bit. The guide pin for the most inferior screw is placed through the drill guide then passed just above the calcar (inferior femoral neck), across the fracture and into the inferior femoral head to within 100mm of subchondral bone. See Figure 1.

In the lateral view, this guide pin should stay in the mid-line of the femoral neck and head. Anteversion may be checked by placing a Guide Pin over the anterior neck.

If fluoroscopy shows that this Guide Pin is not in satisfactory position, then back it out into the cortex and redirect it without making a new cortical hole. Two-plane fluoroscopy confirms the position of the guide wire.

Operative Technique – 6.5/8.0mm

Figure 2
Parallel Guide Wire Insertion

Figure 3
Multiple Guide Wire Insertion

Multiple Guide Pin Insertion

One adjustable parallel pin guide is available (See Figure 2) and two fixed pin guides are available (See Figure 3). Of the two fixed pin guides, one contains a grid of different sized triangles, the other different sized diamonds.

Three screws using a triangle configuration (one screw distally and two proximally) are recommended for Garden I and II fractures, and four screws in a diamond or kite-shape configuration are used for the Garden III and IV fractures that require reduction.

The fixed diamond or triangle guide is then placed over the well positioned guide pin and two additional guide pins are placed.

The guide pins can be power driven directly through the cortex, across the fracture and into the femoral head. Pre-drilling at this level is almost never necessary. Check the length and position of the Guide Pins with fluoroscopy.

Technical Tip

The goal for the positioning of the screws should be to place three or four parallel screws around the periphery of the femoral neck, one in the inferior neck almost along the calcar, one along the mid-posterior neck and one along the mid-anterior neck.
A fourth screw should be placed just below the superior neck in those fractures where a reduction is necessary. These will form the optimal triangle or diamond (kite) patterns, which are biomechanically sound.

The diamond is preferred over a triangular pattern (two distal and two proximal screws) for two reasons:

First, the diamond pattern fits best into the elliptical shape of the femoral neck; second, two holes at the same level, at or distal to the level of the lesser trochanter, can leave a weakness and a potential for later iatrogenic subtrochanteric fracture.

Likewise, when using the triangular pattern, a single screw should be used distally and two screws at the same level more proximally.

If washers are required, ensure adequate screw spacing.

Step two

Figure 4

Measure for Screw Length

The screw length is determined by the Direct Reading Depth Gauge. If in between sizes, use the shorter length. If the fracture is to be compressed, choose a screw 5mm to 10mm shorter than measured. This will leave room for the threads in the femoral head to advance as the screw lags and the fracture compresses.

Operative Technique – 6.5/8.0mm

Figure 5

Step three

Insert Screw

A cannulated screw is then placed over each Guide Pin and driven with the cannulated power shaft (on the low power setting) or hand screwdriver. With the new self-cutting, self-tapping Asnis III screw tip, even hard cortical bone is readily penetrated. If the screw is not of ideal length, it can be removed, leaving the Guide Pin in place and replaced with the appropriate length screw. The Guide Pins are removed and the incision closed.

Step four

Figure 6

Verify Final Reduction

Verify the final position of the screw. Remove and discard all Guide Pins, which are single use only.
Repeat as necessary for additional screws.

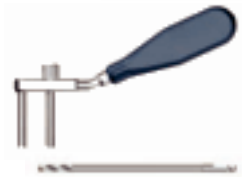
Step five

Screw Removal

Never use a worn, damaged or cannulated screwdriver to remove screws. In the removal of Asnis III screws after the healing of the intracapsular hip fracture, the screw must re-cut the femoral cortex from the inside out to allow for the passage of the threads. Reverse cutting flutes are present for this reason.

If the oblique direction of the screw (approximately 135° to the shaft) is not changed, then the reverse flutes are not in an opportune position to cut the cortex. If the screw head is placed under some traction and the angle of the screw is brought to a perpendicular position with the bone, cutting the cortex will progress and facilitate screw removal.
Be sure to use the solid screwdriver.

Ordering Information – Instruments

	REF	Description
		4.0mm Instruments
	**702425✔**	**Elastosil® Handle with AO Quick Coupling**
	**702465✔**	**Double Drill Guide Ø1.4/2.7mm**
	702449✔	**Cannulated Drill Ø2.7mm with AO Coupling**
	702448	Drill Bit Ø1.4 x 150mm
	702454✔	**Cannulated Tap Ø 4.0mm with AO Coupling**
	702473✔	**Cannulated Countersink for Ø4.0mm Screws with AO Coupling**
	**702499✔**	**Direct Measuring Gauge for Wires Ø1.4/2.0 x 150mm, Ti**
	**702478✔**	**Cannulated Screwdriver with Elastosil® Handle – Hex 2.5mm**
	702482	Cannulated Screwdriver with AO Coupling – Hex 2.5mm
	702485✔	**Solid Screwdriver with AO Coupling – Hex 2.5mm**
	**702489✔**	**Holding Sleeve for Screwdrivers – use with Screwheads Ø5.0mm**
	**702492✔**	**Cleaning Stylet Ø1.4mm**
	702496	Extractor for Ø4.0mm Screws
	900105	Screw Forceps
	702443	Parallel Guide for Ø1.4mm Wires
	702446	Cannulated Drill Ø4.0mm with AO Coupling
		4.0mm Implants – Guidewire
	702459✔	**Asnis III 10 x Threaded Guide Wire Ø1.4 x 150mm (single use)**
		Case
	901576✔	**Asnis III 4.0mm Plastic Lid – (¾ Length)**
	901577✔	**Asnis III 4.0mm System Tray Insert without Screw Rack**
	901578✔	**Asnis III 4.0mm System Screw Rack with Lid**
	901557✔	**Asnis III Plastic Base – (¾ Length)**
	901591	Asnis III Metal Base – (¾ Length)
	901597	Asnis III Lid for Screw Rack Ø4.0/5.0mm
	901674	Tray Insert 4.0mm Minimal Instrument Set
	901673	Plastic Lid 4.0mm Minimal Instrument Set

✔ Recommended Item

Ordering Information – Implants

4.0mm Implants – Partially Threaded Screws

Stainless Steel REF	Diameter mm	Total Length mm	Titanium REF
325014S	4.0	14	604614S
325016S	4.0	16	604616S
325018S	4.0	18	604618S
325020S	4.0	20	604620S
325022S	4.0	22	604622S
325024S	4.0	24	604624S
325026S	4.0	26	604626S
325028S	4.0	28	604628S
325030S	4.0	30	604630S
325032S	4.0	32	604632S
325034S	4.0	34	604634S
325036S	4.0	36	604636S
325038S	4.0	38	604638S
325040S	4.0	40	604640S
325042S	4.0	42	604642S
325044S	4.0	44	604644S
325046S	4.0	46	604646S
325048S	4.0	48	604648S
325050S	4.0	50	604650S
325055S	4.0	55	604655S
325060S	4.0	60	604660S
325065S	4.0	65	604665S
325070S	4.0	70	604670S

For non-sterile implants, please remove "S" from the reference number.

4.0mm Implants – Fully Threaded Screws

Stainless Steel REF	Diameter mm	Total Length mm	Titanium REF
325210S	4.0	10	604710S
325212S	4.0	12	604712S
325214S	4.0	14	604714S
325216S	4.0	16	604716S
325218S	4.0	18	604718S
325220S	4.0	20	604720S
325222S	4.0	22	604722S
325224S	4.0	24	604724S
325226S	4.0	26	604726S
325228S	4.0	28	604728S
325230S	4.0	30	604730S
325232S	4.0	32	604732S
325234S	4.0	34	604734S
325236S	4.0	36	604736S
325238S	4.0	38	604738S
325240S	4.0	40	604740S
325242S	4.0	42	604742S
325244S	4.0	44	604744S
325246S	4.0	46	604746S
325248S	4.0	48	604748S
325250S	4.0	50	604750S

Please Note: Fully Threaded Screws are only available "sterile".

4.0mm Implants – Washers

390018	Asnis III Washer for 4.0mm Screws	619905

Ordering Information – Instruments

REF	Description
5.0mm Instruments	
702425✔	**Elastosil® Handle with AO Quick Coupling**
702445✔	**Double Drill Guide Ø 2.0/3.5mm**
702450✔	**Cannulated Drill Ø 3.5mm with AO Coupling**
702453	Drill Bit Ø 2.0 x 150mm
702455✔	**Cannulated Tap Ø 5.0mm with AO Coupling**
702474✔	**Cannulated Countersink for Ø 5.0mm Screws with AO Coupling**
702499✔	**Direct Measuring Gauge for Wires Ø1.4/2.0 x 150mm, Ti**
702480✔	**Cannulated Screwdriver with Elastosil® Handle – Hex 3.5mm**
702486	Cannulated Screwdriver with AO Coupling – Hex 3.5mm
702488✔	**Solid Screwdriver with AO Coupling – Hex 3.5mm**
702490✔	**Holding Sleeve for Screwdrivers – use with Screwheads Ø 6.0mm**
702493✔	**Cleaning Stylet Ø 2.0mm**
702497	Extractor for Ø 5.0mm Screws
900105	Screw Forceps
702444	Parallel Guide for Ø 2.0mm Wire
702447	Cannulated Drill Ø 5.0mm with AO Coupling
5.0mm Implants – Guide Wire	
702460✔	**Asnis III 10 x Threaded Guide Wire Ø2.0 x 150mm (single use)**
Case	
901556✔	**Asnis III 5.0mm Plastic Lid – (¾ Length)**
901565✔	**Asnis III 5.0mm System Tray Insert without Screw Rack**
901560✔	**Asnis III 5.0mm System Screw Rack with Lid**
901557✔	**Asnis III Plastic Base – (¾ Length)**
901591	Asnis III Metal Base – (¾ Length)
901597	Asnis III Lid for Screw Rack Ø4.0/5.0mm
901676	Tray Insert 5.0mm Minimal Instrument Set
901675	Plastic Lid 5.0mm Minimal Instrument Set

✔ Recommended Item

Ordering Information – Implants

5.0mm Implants – Partially Threaded Screws

Stainless Steel REF	Diameter mm	Total Length mm	Titanium REF
325420S	5.0	20	601620S
325422S	5.0	22	601622S
325424S	5.0	24	601624S
325426S	5.0	26	601626S
325428S	5.0	28	601628S
325430S	5.0	30	601630S
325432S	5.0	32	601632S
325434S	5.0	34	601634S
325436S	5.0	36	601636S
325438S	5.0	38	601638S
325440S	5.0	40	601640S
325442S	5.0	42	601642S
325444S	5.0	44	601644S
325446S	5.0	46	601646S
325448S	5.0	48	601648S
325450S	5.0	50	601650S
325455S	5.0	55	601655S
325460S	5.0	60	601660S
325465S	5.0	65	601665S
325470S	5.0	70	601670S
325475S	5.0	75	601675S
325480S	5.0	80	601680S

For non-sterile implants, please remove "S" from the reference number.

5.0mm Implants – Fully Threaded Screws

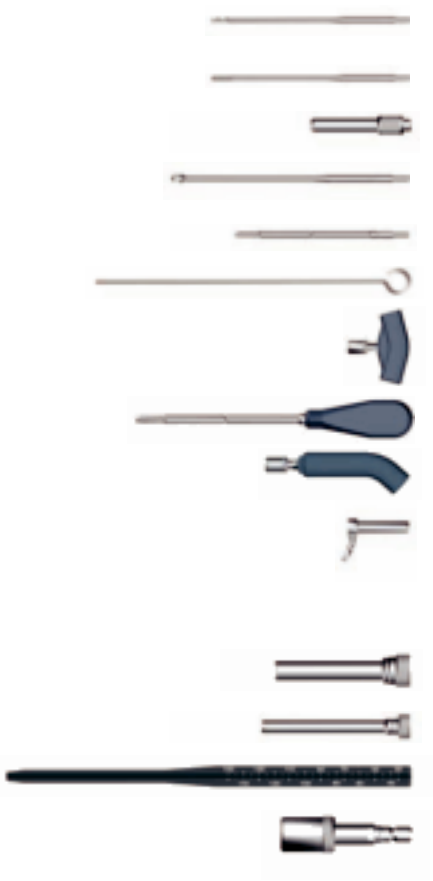
Stainless Steel REF	Diameter mm	Total Length mm	Titanium REF
325620S	5.0	20	601720S
325622S	5.0	22	601722S
325624S	5.0	24	601724S
325626S	5.0	26	601726S
325628S	5.0	28	601728S
325630S	5.0	30	601730S
325632S	5.0	32	601732S
325634S	5.0	34	601734S
325636S	5.0	36	601736S
325638S	5.0	38	601738S
325640S	5.0	40	601740S
325642S	5.0	42	601742S
325644S	5.0	44	601744S
325646S	5.0	46	601746S
325648S	5.0	48	601748S
325650S	5.0	50	601750S
325655S	5.0	55	601755S
325660S	5.0	60	601760S
325665S	5.0	65	601765S
325670S	5.0	70	601770S

Please Note: Fully Threaded Screws are only available "sterile".

5.0mm Implants – Washers

390017	Asnis III Washer for 5.0mm Screws	619906

Ordering Information – Instruments



REF	Description
6.5mm Instrument System	
702601✔	**Cannulated Drill Ø4.9mm with Large AO Fitting**
702602✔	**Cannulated Tap Ø6.5mm with Large AO Fitting**
702604✔	**Holding Sleeve for Screwdrivers – use with Screwheads Ø8.0mm**
702621	Cannulated Countersink for 6.5/8.0mm Screws with AO Fitting
702623✔	**Solid Screwdriver with Large AO Fitting – Hex 5.0mm**
702625✔	**Cleaning Stylet Ø3.2mm**
702628✔	**Elastosil® T-Handle with Large AO Coupling**
702629✔	**Cannulated Screwdriver with Elastosil® Handle – Hex 5.0mm**
702630✔	**Elastosil® Hammer-Handle with Large AO Coupling**
702638✔	**Protection Sleeve with Large AO Fitting**
702639✔	**Screw Insertion Sleeve**
702640✔	**Guide Wire Insertion Sleeve for Ø3.2mm Guide Wires**
702495✔	**Direct Measuring Gauge for Ø3.2mm Guide Wires, Ti**
702634	Large AO Coupling - Hall Fitting
Case	
901584✔	**Asnis III 6.5/8.0mm Plastic Lid (Full Length)**
901587✔	**Asnis III 6.5/8.0mm System Tray Insert without Screw Rack**
901588✔	**Asnis III 6.5/8.0mm System Screw Rack with Lid**
901585✔	**Asnis III 6.5/8.0mm Plastic Base (Full Length)**
901586	Asnis III 6.5/8.0mm Metal Base (Full Length)
901589	Asnis III 6.5/8.0mm Plastic Lid (¾ Length)
901557	Asnis III Plastic Base (¾ Length)
901591	Asnis III Metal Base (¾ Length)
901678	Asnis III Tray Insert 6.5/8.0mm Minimal Instrument Set
901677	Asnis III Plastic Lid 6.5/8.0mm Minimal Instrument Set

✔ Recommended Item

Ordering Information – Instruments

	REF	Description
	Additional for 8.0mm System	
	**702611✔**	**Cannulated Drill Ø5.6mm with Large AO Fitting**
	702612✔	**Cannulated Tap Ø8.0mm with Large AO Fitting**
	702614✔	**Holding Sleeve for Screwdrivers – use with Screwheads Ø9.0mm**
		Required only if 8.0mm Screws are included
	Other Instruments	
	702603	Cannulated Drill Ø6.5mm with Large AO Fitting*
	702613	Cannulated Drill Ø8.0mm with Large AO Fitting*
	702622	Cannulated Screwdriver with Large AO Fitting – Hex 5.0mm
	702624	Extractor for Ø6.5/8.0mm Screws
	702626	Drill Bit Ø3.2 x 300mm
	702632	Multiple Drill Guide Triangular Pattern with Elastosil® Hammer-Handle
	702633	Multiple Drill Guide Triangular Pattern with Large AO Fitting
	702635	Parallel Drill Guide with Elastosil® Hammer-Handle
	702636	Parallel Drill Guide with Large AO Fitting
	702637	Protection Sleeve with Elastosil® Hammer-Handle
	702641	Quick Release Driver with Hall Fitting
	702642	Multiple Drill Guide Diamond Pattern with Large AO Fitting
	900105	Screw Forceps

*__Please Note:__ These drills are used only with full thread implants.

	6.5mm System continued	
	702462✔	**Asnis III 10 x Threaded Guide Wire Ø 3.2 x 300mm (Single Use)**
	702463	Asnis III Guide Wire without Thread Ø 3.2 x 300mm (Single Use)
	702627	Asnis III Guide Wire with Calibrations and fitting Ø 3.2 x 300mm (Single Use)

✔ Recommended Item

Ordering Information – Implants

6.5mm Implants – 20mm Thread Length

Stainless Steel REF	Diameter mm	Total Length mm	Titanium REF
326040S	6.5	40	602640S
326045S	6.5	45	602645S
326050S	6.5	50	602650S
326055S	6.5	55	602655S
326060S	6.5	60	602660S
326065S	6.5	65	602665S
326070S	6.5	70	602670S
326075S	6.5	75	602675S
326080S	6.5	80	602680S
326085S	6.5	85	602685S
326090S	6.5	90	602690S
326095S	6.5	95	602695S
326100S	6.5	100	602700S
326105S	6.5	105	602705S
326110S	6.5	110	602710S
326115S	6.5	115	602715S
326120S	6.5	120	602720S

For non-sterile implants, please remove "S" from the reference number.

6.5mm Implants – 40mm Thread Length

Stainless Steel REF	Diameter mm	Total Length mm	Titanium REF
326255S	6.5	55	602855S
326260S	6.5	60	602860S
326265S	6.5	65	602865S
326270S	6.5	70	602870S
326275S	6.5	75	602875S
326280S	6.5	80	602880S
326285S	6.5	85	602885S
326290S	6.5	90	602890S
326295S	6.5	95	602895S
326300S	6.5	100	602900S
326305S	6.5	105	602905S
326310S	6.5	110	602910S
326315S	6.5	115	602915S
326320S	6.5	120	602920S
326325S*	6.5	125	602925S*
326330S*	6.5	130	602930S*

For non-sterile implants, please remove "S" from the reference number.

* Special Order.

Ordering Information – Implants

6.5mm Implants – Fully Threaded Screws

Stainless Steel REF	Diameter mm	Total Length mm	Titanium REF
326430S	6.5	30	606030S
326435S	6.5	35	606035S
326440S	6.5	40	606040S
326445S	6.5	45	606045S
326450S	6.5	50	606050S
326455S	6.5	55	606055S
326460S	6.5	60	606060S
326465S	6.5	65	606065S
326470S	6.5	70	606070S
326475S	6.5	75	606075S
326480S	6.5	80	606080S
326485S	6.5	85	606085S
326490S	6.5	90	606090S
326495S	6.5	95	606095S
326500S	6.5	100	606100S
326505S	6.5	105	606105S
326510S	6.5	110	606110S
326515S	6.5	115	606115S
326520S	6.5	120	606120S
326525S*	6.5	125	606125S*
326530S*	6.5	130	606130S*
-	6.5	135	606135S*
-	6.5	140	606140S*
-	6.5	145	606145S*
-	6.5	150	606150S*

Please Note: Fully Threaded Screws are only available "sterile".

* Special Order.

Ordering Information – Implants

8.0mm Implants – 25mm Thread Length

Stainless Steel REF	Diameter mm	Total Length mm	Titanium REF
326640S	8.0	40	611040S
326645S	8.0	45	611045S
326650S	8.0	50	611050S
326655S	8.0	55	611055S
326660S	8.0	60	611060S
326665S	8.0	65	611065S
326670S	8.0	70	611070S
326675S	8.0	75	611075S
326680S	8.0	80	611080S
326685S	8.0	85	611085S
326690S	8.0	90	611090S
326695S	8.0	95	611095S
326700S	8.0	100	611100S
326705S	8.0	105	611105S
326710S	8.0	110	611110S
326715S	8.0	115	611115S
326720S	8.0	120	611120S
326725S*	8.0	125	611125S*
326730S*	8.0	130	611130S*
326735S*	8.0	135	-
326740S*	8.0	140	-
326745S*	8.0	145	-
326750S*	8.0	150	-
326755S*	8.0	155	-
326760S*	8.0	160	-
326765S*	8.0	165	-
326770S*	8.0	170	-
326775S*	8.0	175	-
326780S*	8.0	180	-

For non-sterile implants, please remove "S" from the reference number.

8.0mm Implants – Fully Threaded Screws

Stainless Steel REF	Diameter mm	Total Length mm	Titanium REF
326840S	8.0	40	611240S
326845S	8.0	45	611245S
326850S	8.0	50	611250S
326855S	8.0	55	611255S
326860S	8.0	60	611260S
326865S	8.0	65	611265S
326870S	8.0	70	611270S
326875S	8.0	75	611275S
326880S	8.0	80	611280S
326885S	8.0	85	611285S
326890S	8.0	90	611290S
326895S	8.0	95	611295S
326900S	8.0	100	611300S
326905S	8.0	105	611305S
326910S	8.0	110	611310S
326915S	8.0	115	611315S
326920S	8.0	120	611320S
326925S*	8.0	125	611325S*
326930S*	8.0	130	611330S*
-	8.0	135	611335S*
-	8.0	140	611340S*
-	8.0	145	611345S*
-	8.0	150	611350S*

Please Note: Fully Threaded Screws are only available "sterile".

6.5/8.0mm Implants – Washers

390016	Asnis III Washer for 6.5/8.0mm Screws	619904

* Special Order.

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