

# ARTEMIS

MINIMALLY INVASIVE SCREW SYSTEM

Surgical Technique



Proper surgical procedures and techniques are the responsibility of the medical professional. The following guidelines are furnished for information purposes only. Each surgeon must evaluate the appropriateness of the procedures based on his or her personal medical training and experience.

For information on product availability in your area, please contact your local sales representative.

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# ARTEMIS Surgical Technique

## INTRODUCTION

### Minimally Invasive, Maximum Reconstruction

The ARTEMIS System provides comprehensive burr and implant options for the minimally invasive, percutaneous fixation in the foot and ankle. ARTEMIS screws are provided in diameters of 3.0mm and 4.0mm and are manufactured from titanium alloy (Ti-6Al-4V, per ASTM F136) . ARTEMIS screws are offered in a comprehensive range of variable lengths in 2mm increments to provide solutions for a wide range of percutaneous fixation.

ARTEMIS implants have been designed with a chevron head and fully threaded cutting flutes to maximize compression by seating flush with the near cortex, preserving soft tissue structures.

### Burr Options



**Shannon Burrs**


Diameter	Drill Tip Length
2mm	8mm
2mm	12mm
2.2mm	20mm
3.0mm	20mm
3.0mm	30mm



**Wedge Burr**

Diameter	Drill Tip Length
3mm	10mm
4mm	13mm

### Implant Options



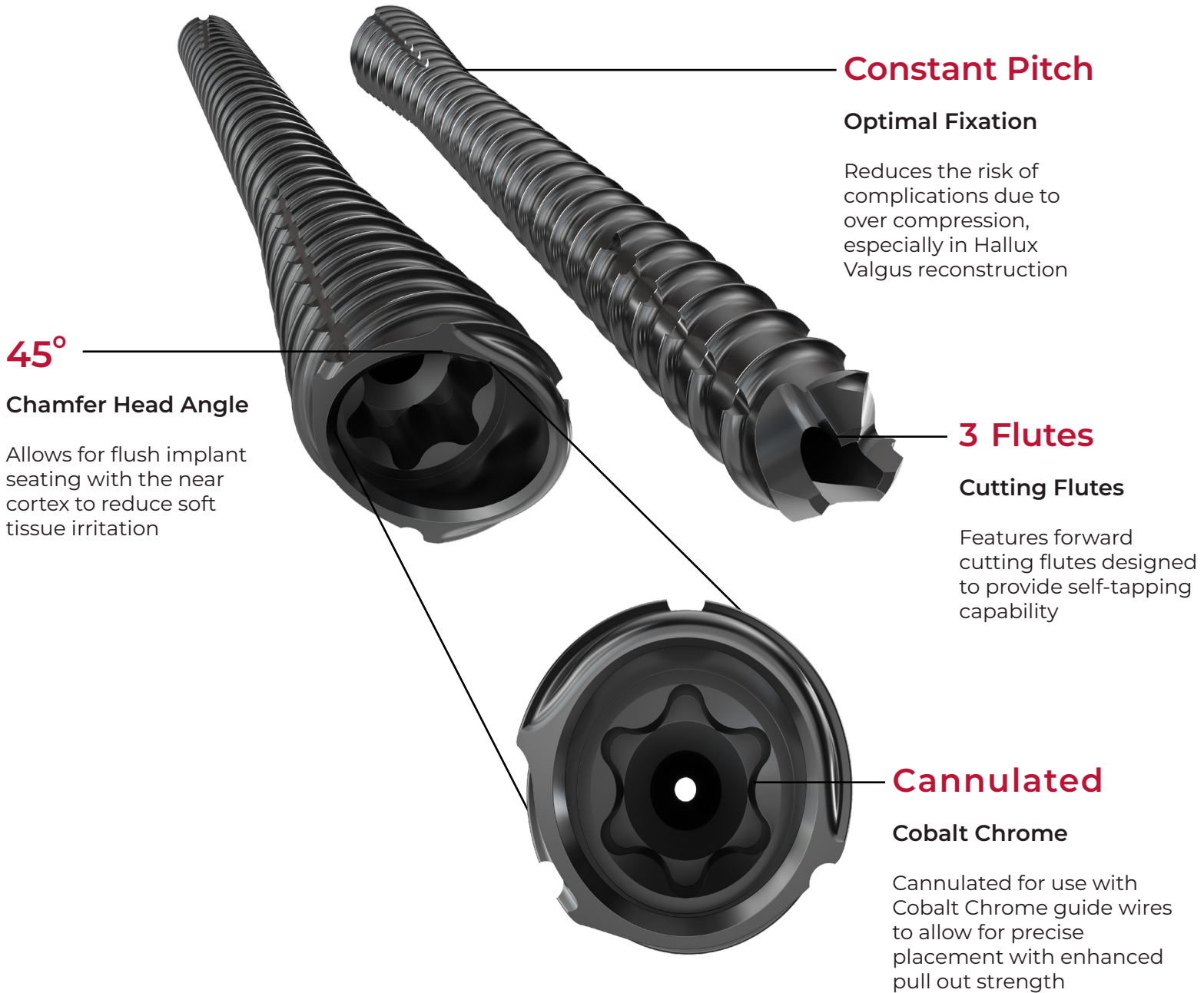
**Constant Pitch Chamfer Head**

Diameter	Lengths
3mm	12mm - 50mm (2mm inc.)
4mm	16mm - 70mm (2mm inc.)

# ARTEMIS Surgical Technique

## SCREW FEATURES

Designed for Optimal Fixation



**45°**  
**Chamfer Head Angle**  
Allows for flush implant seating with the near cortex to reduce soft tissue irritation

**Constant Pitch**  
**Optimal Fixation**  
Reduces the risk of complications due to over compression, especially in Hallux Valgus reconstruction

**3 Flutes**  
**Cutting Flutes**  
Features forward cutting flutes designed to provide self-tapping capability

**Cannulated**  
**Cobalt Chrome**  
Cannulated for use with Cobalt Chrome guide wires to allow for precise placement with enhanced pull out strength

# ARTEMIS Surgical Technique

## INDICATIONS & CONTRAINDICATIONS

### Indications

TITANEX™ ARTEMIS Screw System is indicated for fracture fixation, osteotomies, reconstruction procedures and arthrodesis in the foot and ankle.

### Contraindications

Do not use Vilex implants in the presence of any contraindication. There are no contraindications specific to ARTEMIS, however general surgical contraindications include, but are not limited to:

- Active Infection
- Psychologically inadequate patient
- Growing patients with open epiphyses
- Insufficient quantity or quality of bone to permit stabilization of the arthrodesis
- Suspected or documented metal allergy or intolerance

### MRI Statement

The TITANEX™ ARTEMIS Screw System has not been evaluated for safety in the MR environment. It has not been tested for heating or unwanted movement in the MR environment. The safety of the TITANEX™ ARTEMIS Screw System in the MR environment is unknown. Performing an MR exam on a person who has this medical device may result in injury or device malfunction.

# ARTEMIS Surgical Technique

## OPERATIVE GUIDE

### General Overview

The Surgical Technique steps listed below are designed to provide a general overview on the instruments and procedure for implanting a TITANEX™ ARTEMIS Screw.

### 1. Planning & Preparation

Create a procedure-specific incision over the desired region and dissect to the bone anatomy.

The incision should be large enough to allow the necessary surgical steps – at minimum the incision must be large enough to allow the desired screw size and instruments to pass through, at least 0.5 cm.

### 2. Wire Insertion

After incision, determine the correct Guide Wire (AZ-K190-XXC) for the selected screw size and insert it into the bone. Confirm final wire placement position under flouroscopy.

Wire	Screw Diameter
1.1mm Wire	3.0mm Screws
1.6mm Wire	4.0mm Screws

**NOTE:** The system specific instruments are located in the same modular caddy as the intended screw size.

### 3. Length Measurement

Once final wire position has been confirmed, select the appropriate depth gauge and place the gauge over the guide wire, advancing it until the tip of the gauge rests firmly against the near bone surface.

Depth Gauge	Screw Diameter
AZ-DPTH	3.0mm Screws
AZ-DPTH	4.0mm Screws

### INSTRUMENTS USED

WIRE  
AZ-K190-XXC



DEPTH GAUGE  
AZ-DPTH

Once in place, the position of the end of the wire against the depth gauge scale will accurately reflect the screw length needed.

Use fluoroscopy, direct visual assessment, or tactile feel to ensure that the wire tip is in the correct location before final determination of length: read the depth off of the depth gauge scale only when the end of the wire within the patient accurately represents the desired end of the screw.

**NOTE:** Measurement compensation may be needed for fracture reduction, osteotomy shift, washer height (if using a washer), off-angle measuring, and weak bone density. Subtracting 1-2mm from the indicated measurement may be appropriate if these conditions

## 4. Pre-Drilling

**NOTE:** All screws within the system are self-drilling and self-tapping.

If desired, the bone may be pre-drilled in preparation for screw insertion; this may be useful in cases where hard cortical bone is present.

Insert the size-specific drill into the desired driver handle using the quick-connect mechanism.

Drill	Screw Diameter
2.6mm	3.0mm Screws
3.3mm	4.0mm Screws

Alternatively, power may be used, though low speed is recommended to reduce the chance of over-drilling or damaging the guide wire.

Place the drill over the guide wire and drill clockwise through the bone to the desired depth (use fluoroscopy or direct visual assessment to determine the wire tip position relative to the drill).

**NOTE:** Drilling all the way to the wire tip may cause the wire to lose hold within the bone.

## INSTRUMENTS USED



**2.6MM DRILL**  
**AZ-D130-26**



**3.3MM DRILL**  
**AZ-D150-33**



## 5. Implantation

Insert the size-specific driver into the desired driver handle using the quick-connect mechanism. Power is not recommended for the screw insertion process.

Driver	Screw Diameter
T10	3.0mm Screws
T15	4.0mm Screws

Remove the appropriate length screw from the caddy and place the screw over the guide wire.

Place the driver over the guide wire and insert the driver tip into the head of the screw, ensuring the driver is fully seated into the screw head as deep as possible.

Advance the screw into the bone by turning the driver clockwise, allowing the threading to self-tap into the bone. Applying firm linear pressure during the driving process ensures that the driver stays seated within the screw for the duration of the process, minimizing any chance of the screw head stripping.

Increased resistance will be felt when the screw head contacts the near cortex – visually assess the screw head seating to ensure it is as desired.

Multi-planar fluoroscopy is recommend to be used during the insertion process to ensure the screw is positioned correctly and the desired depth is achieved

## 6. Wire Removal

After the screw is fully-seated, grasp the wire and apply linear pressure away from the screw to remove the guide wire from the surgical incision and screw.

Once the wire has been removed, perform a final verification using fluoroscopy to ensure that the screw is fully-seated and the depth is as desired.

Repeat the previous steps as many times as needed to install the desired number of screws for the specific surgical procedure.

### INSTRUMENTS USED



**CANNULATED T10 DRIVER**  
**AZ-DT10-CR**



**CANNULATED T15 DRIVER**  
**AZ-DT15-CR**

## 7. Closure & Post Operative Care

After the final screw has been placed, ensure all instrumentation is removed from the surgical incision. Irrigate the incision and perform a surgical closure of the soft tissue.

Postoperative care is the responsibility of the medical professional.

## 8. Implant Removal

Insert the size-specific driver into the desired AO driver handle using the quick-connect mechanism.

Driver	Screw Diameter
T10	3.0mm Screws
T15	4.0mm Screws

Utilize the Implant Driver on the ratcheting Handle to back out the screw by engaging with the screw head and turning counterclockwise on the screw.

### INSTRUMENTS USED



**CANNULATED T10 DRIVER**  
**AZ-DT10-CR**



**CANNULATED T15 DRIVER**  
**AZ-DT15-CR**

# ARTEMIS Surgical Technique

## Part Reference Guide

### INSTRUMENTS

Part Number	Description
AZ-K190-11C	K-Wire, Ø1.1 x 190mm CoCr
AZ-K190-16C	K-Wire, Ø1.6 x 190mm CoCr
AZ-DPTH	Depth Gage, for Ø3.0/Ø4.0 Artemis Screws
AZ-D130-26	Drill, Cannulated, Ø2.6mm x 6"
AZ-D150-33	Drill, Cannulated Ø3.3mm x 6"
AZ-DT10-CR	Cannulated T10 Straight Driver
AZ-DT15-CR	Cannulated T15 Straight Driver
H254	AO Handle

### 3.0MM CONSTANT PITCH CHAMFER SCREW

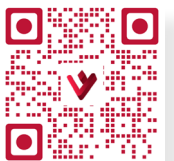
Part Number	Description
AC30-12T-11C	TITANEX ARTEMIS 3.0 x 12mm Screw - CP Chamfer
AC30-14T-11C	TITANEX ARTEMIS 3.0 x 14mm Screw - CP Chamfer
AC30-16T-11C	TITANEX ARTEMIS 3.0 x 16mm Screw - CP Chamfer
AC30-18T-11C	TITANEX ARTEMIS 3.0 x 18mm Screw - CP Chamfer
AC30-20T-11C	TITANEX ARTEMIS 3.0 x 20mm Screw - CP Chamfer
AC30-22T-11C	TITANEX ARTEMIS 3.0 x 22mm Screw - CP Chamfer
AC30-24T-11C	TITANEX ARTEMIS 3.0 x 24mm Screw - CP Chamfer
AC30-26T-11C	TITANEX ARTEMIS 3.0 x 26mm Screw - CP Chamfer
AC30-28T-11C	TITANEX ARTEMIS 3.0 x 28mm Screw - CP Chamfer
AC30-30T-11C	TITANEX ARTEMIS 3.0 x 30mm Screw - CP Chamfer
AC30-32T-11C	TITANEX ARTEMIS 3.0 x 32mm Screw - CP Chamfer
AC30-34T-11C	TITANEX ARTEMIS 3.0 x 34mm Screw - CP Chamfer
AC30-36T-11C	TITANEX ARTEMIS 3.0 x 36mm Screw - CP Chamfer
AC30-38T-11C	TITANEX ARTEMIS 3.0 x 38mm Screw - CP Chamfer
AC30-40T-11C	TITANEX ARTEMIS 3.0 x 40mm Screw - CP Chamfer
AC30-42T-11C	TITANEX ARTEMIS 3.0 x 42mm Screw - CP Chamfer
AC30-44T-11C	TITANEX ARTEMIS 3.0 x 44mm Screw - CP Chamfer
AC30-46T-11C	TITANEX ARTEMIS 3.0 x 46mm Screw - CP Chamfer
AC30-48T-11C	TITANEX ARTEMIS 3.0 x 48mm Screw - CP Chamfer
AC30-50T-11C	TITANEX ARTEMIS 3.0 x 50mm Screw - CP Chamfer

## 4.0MM CONSTANT PITCH CHAMFER SCREW

Part Number	Description
AC40-16T-16C	TITANEX ARTEMIS 4.0 x 16mm Screw - CP Chamfer
AC40-18T-16C	TITANEX ARTEMIS 4.0 x 18mm Screw - CP Chamfer
AC40-20T-16C	TITANEX ARTEMIS 4.0 x 20mm Screw - CP Chamfer
AC40-22T-16C	TITANEX ARTEMIS 4.0 x 22mm Screw - CP Chamfer
AC40-24T-16C	TITANEX ARTEMIS 4.0 x 24mm Screw - CP Chamfer
AC40-26T-16C	TITANEX ARTEMIS 4.0 x 26mm Screw - CP Chamfer
AC40-28T-16C	TITANEX ARTEMIS 4.0 x 28mm Screw - CP Chamfer
AC40-40T-16C	TITANEX ARTEMIS 4.0 x 40mm Screw - CP Chamfer
AC40-42T-16C	TITANEX ARTEMIS 4.0 x 42mm Screw - CP Chamfer
AC40-44T-16C	TITANEX ARTEMIS 4.0 x 44mm Screw - CP Chamfer
AC40-46T-16C	TITANEX ARTEMIS 4.0 x 46mm Screw - CP Chamfer
AC40-48T-16C	TITANEX ARTEMIS 4.0 x 48mm Screw - CP Chamfer
AC40-40T-16C	TITANEX ARTEMIS 4.0 x 40mm Screw - CP Chamfer
AC40-42T-16C	TITANEX ARTEMIS 4.0 x 42mm Screw - CP Chamfer
AC40-44T-16C	TITANEX ARTEMIS 4.0 x 44mm Screw - CP Chamfer
AC40-46T-16C	TITANEX ARTEMIS 4.0 x 46mm Screw - CP Chamfer
AC40-48T-16C	TITANEX ARTEMIS 4.0 x 48mm Screw - CP Chamfer
AC40-50T-16C	TITANEX ARTEMIS 4.0 x 50mm Screw - CP Chamfer
AC40-52T-16C	TITANEX ARTEMIS 4.0 x 52mm Screw - CP Chamfer
AC40-54T-16C	TITANEX ARTEMIS 4.0 x 54mm Screw - CP Chamfer
AC40-56T-16C	TITANEX ARTEMIS 4.0 x 56mm Screw - CP Chamfer
AC40-58T-16C	TITANEX ARTEMIS 4.0 x 58mm Screw - CP Chamfer
AC40-60T-16C	TITANEX ARTEMIS 4.0 x 60mm Screw - CP Chamfer
AC40-62T-16C	TITANEX ARTEMIS 4.0 x 62mm Screw - CP Chamfer
AC40-64T-16C	TITANEX ARTEMIS 4.0 x 64mm Screw - CP Chamfer
AC40-66T-16C	TITANEX ARTEMIS 4.0 x 66mm Screw - CP Chamfer
AC40-68T-16C	TITANEX ARTEMIS 4.0 x 68mm Screw - CP Chamfer
AC40-70T-16C	TITANEX ARTEMIS 4.0 x 70mm Screw - CP Chamfer

## BURR KIT

Part Number	Description
AZ-RDR4I	ARTEMIS 4:1 Reducer
DI208065R	Burr, Isham Short Straight Flute 2mm x 8mm x 65mm
DI201265R	Burr, Isham Short Straight Flute 2mm x 12mm x 65mm
DI222075R	Burr, Isham Short Straight Flute 2mm x 20mm x 75mm
DS302075R	Burr, Long Straight Shannon Flute 3mm x 20mm x 75mm
DS3030100R	Burr, Long Straight Shannon Flute 3mm x 30mm x 100mm
DW311065R	Wedge Burr 3mm x 30mm x 65mm
DW411365R	Wedge Burr 4mm x 13mm x 65mm



Learn more about the  
ARTEMIS System

This document is intended solely for the use of healthcare professionals.

The Instructions for Use, Surgical Techniques, Cleaning instructions, and other associated labeling may be requested online at [www.vilex.com](http://www.vilex.com).

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