

UTS™ Stem

Femoral Hip System



Surgical Technique Guide

Table of Contents

Device Description..... II

Surgical Overview IV

Surgical Protocol

Pre-operative Planning and Templating 1

A. Femoral Osteotomy2

B. Femoral Canal Accessing3

C. Canal Reaming4

D. Lateralization5

E. Alignment Check.....6

F. Canal Broaching7

G. Calcar Preparation8

H. Trial Reduction.....9

I. Stem Insertion 10

J. Stem Impaction..... 11

K. Femoral Head Impaction 12

Order Information 13

Device Description

United Tri-tapered Short (UTS) Stem –

Ideal for the MIS approach, the UTS Stem is a tri-tapered wedge stem suitable for minimally invasive primary hip replacement surgery. It is designed for easier insertion utilizing soft tissue sparing MIS technique, enabling rapid recovery. The shorter stem design enables the preservation of native healthy bone for implant fixation and correct alignment based on the patient's anatomy.

Provides surgeons with a variety of fits for individual anatomies:

- 16 available sizes
- Standard and high offset options
- Up to 6 head neck length selections

INDICATIONS

This device is indicated for use in total hip replacement or bipolar hip replacement undergoing primary and revision surgery for the following conditions:

1. Non-inflammatory degenerative joint disease such as osteoarthritis, avascular necrosis, ankylosis, protrusion acetabuli, and painful hip dysplasia.
2. Inflammatory degenerative joint disease such as rheumatoid arthritis.
3. Correction of functional deformity.
4. Treatment of non-union, femoral neck fracture and trochanteric fractures of the proximal femur with head involvement, unmanageable using other techniques.
5. Revision procedures where other treatments or devices have failed.
6. This device is designed for cementless use.

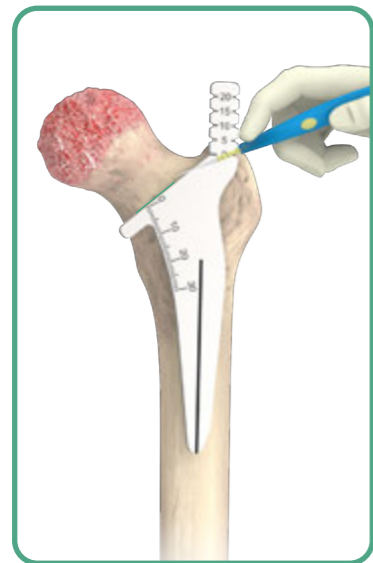
CONTRAINDICATIONS

1. Any active or suspected latent infection in or about the operative site.
2. Any mental or neuromuscular disorder which would create an unacceptable risk of prosthesis instability, prosthesis fixation failure, or complications in postoperative care.
3. Bone stock compromised by disease, infection or prior implantation which cannot provide adequate support and/or fixation to the prosthesis.
4. Skeletal immaturity.
5. Overweight (> 200 lbs). An overweight patient can produce loads on the prosthesis which can lead to failure of the fixation of the device or to failure of the device itself.
6. For use as a Hip Replacement, pathological conditions of the acetabulum which would prevent achieving adequate range of motion, appropriate head stability, and/or a well-seated and supported smooth acetabular articulation of the head.
7. Patients who is sensitive to any materials of the device.

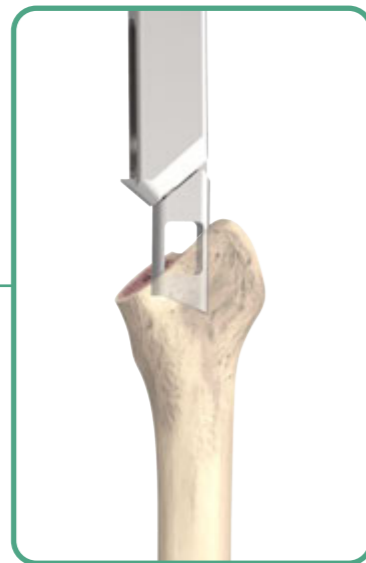
Please note, this Surgical Protocol is consistent with our validated labeling. It is not intended to substitute for each surgeon's individual medical judgment regarding patient care. It is intended to be a reference document to be utilized in support of total hip arthroplasty using United Orthopedics' UTS stem.



Surgical Overview



A. Femoral Osteotomy



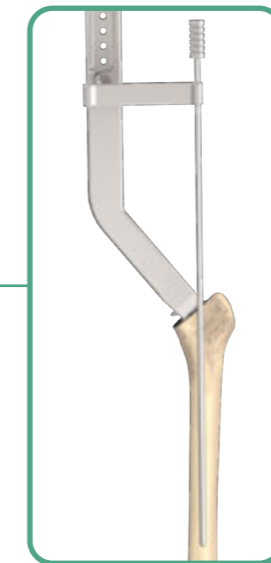
B. Femoral Canal Accessing



C. Canal Reaming



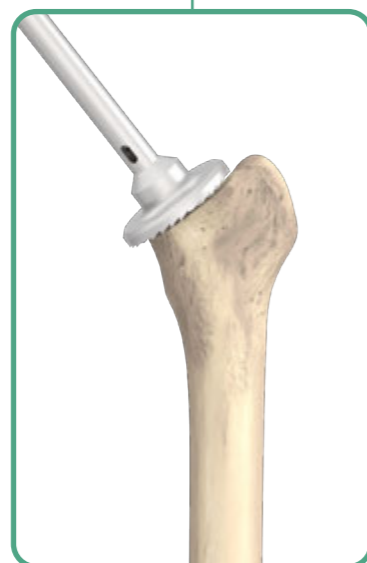
D. Lateralization



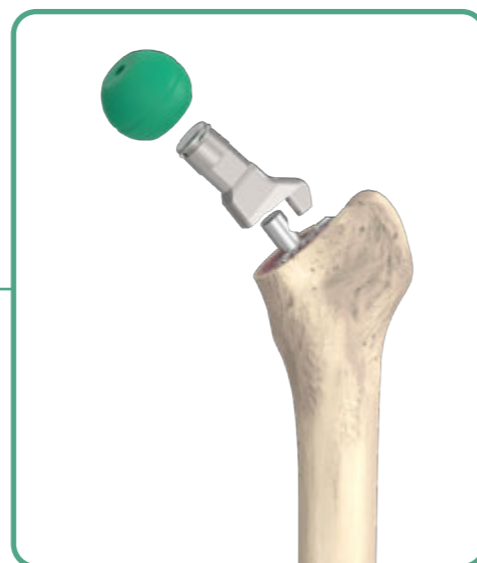
E. Alignment Check



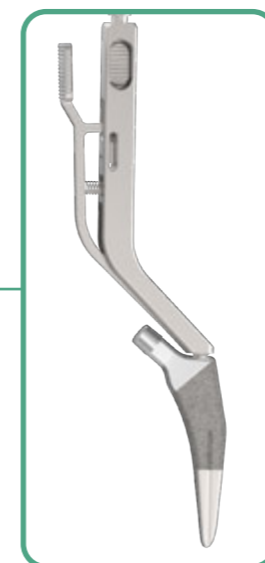
F. Canal Broaching



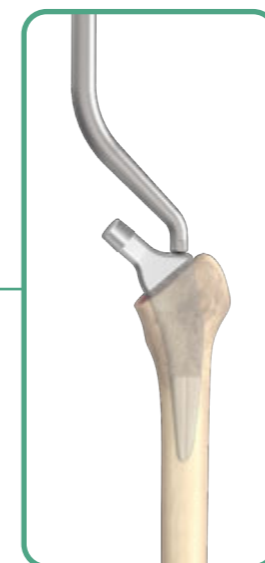
G. Calcar Preparation



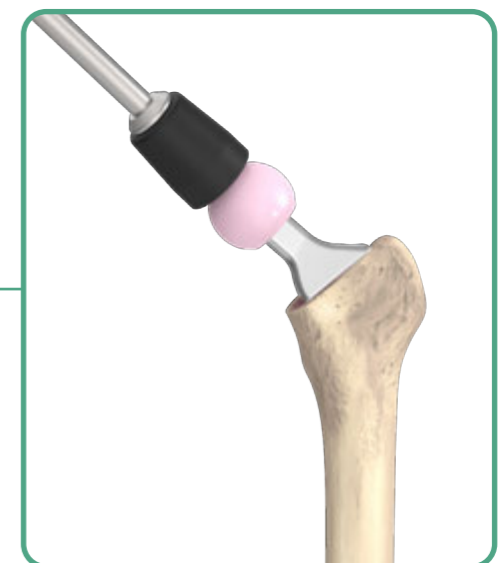
H. Trial Reduction



I. Stem Insertion



J. Stem Impaction

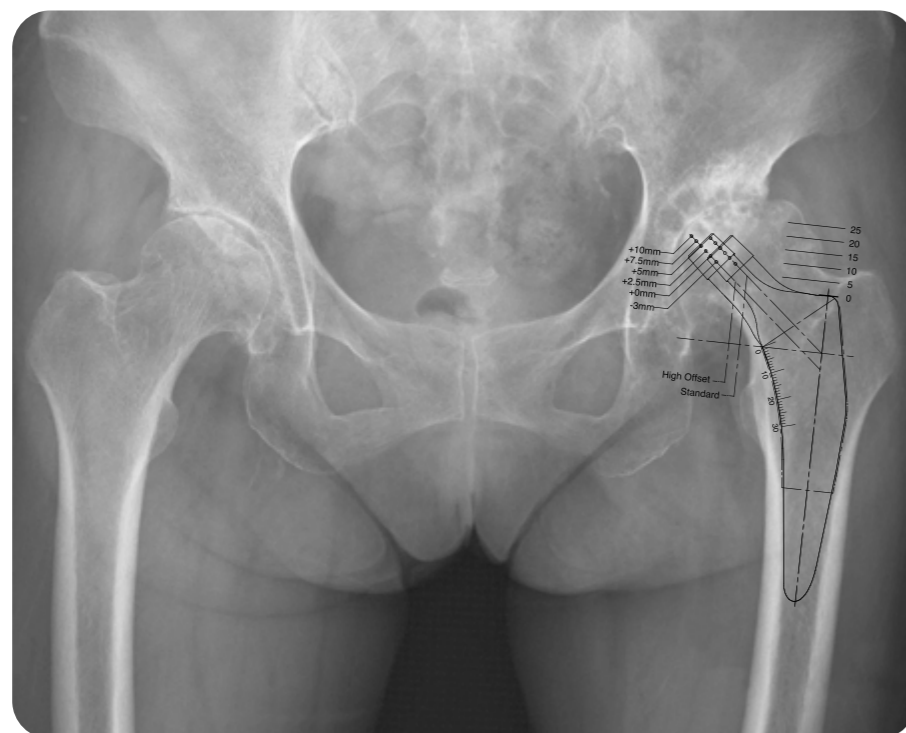


K. Femoral Head Impaction

Preoperative Planning and Templating

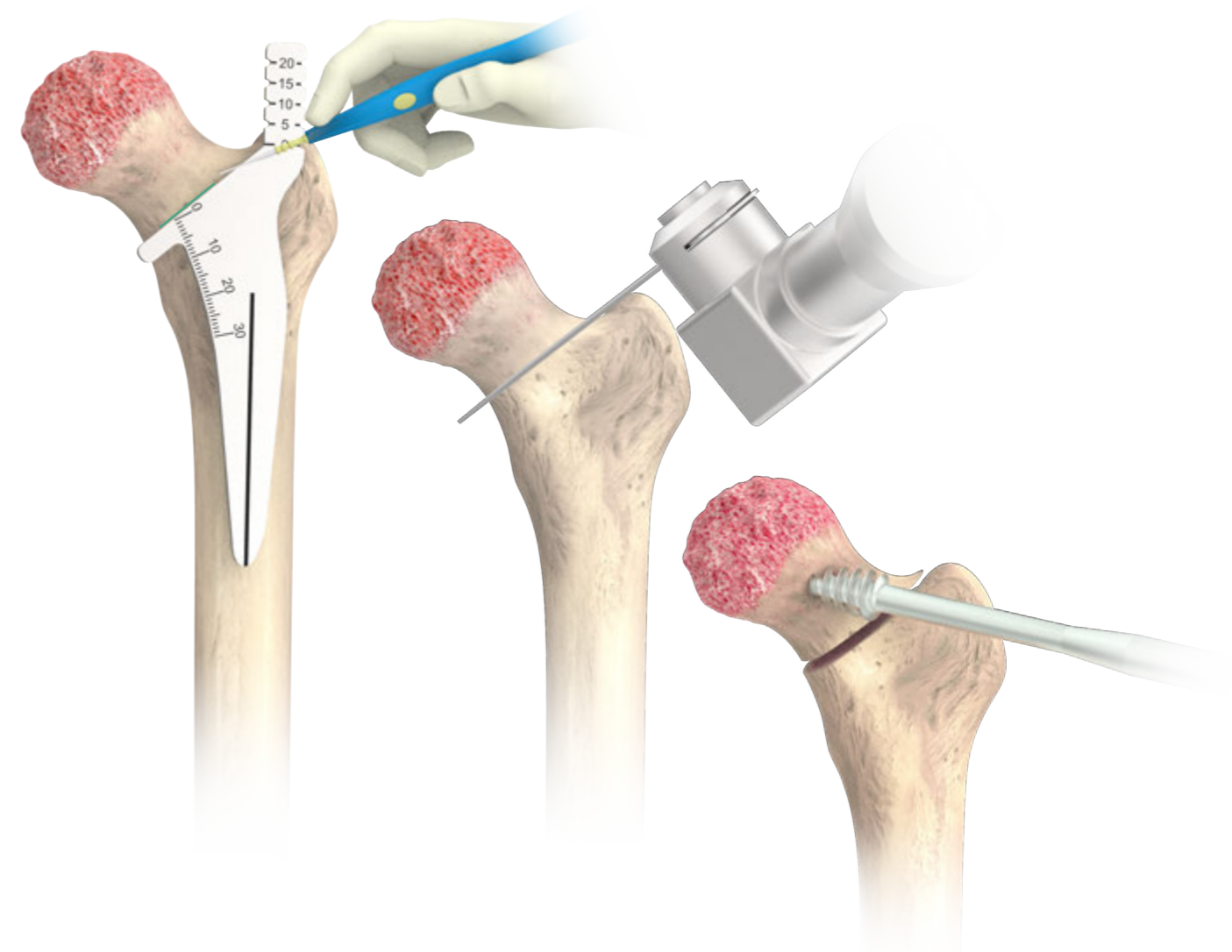
Preoperative planning is essential for determining the optimal stem size, neck resection level and the appropriate neck length. Making an accurate femoral component selection begins with thorough radiographic evaluation of the involved femur, both A/P view and lateral view. The A/P radiographic image should include bilateral hip joints to help evaluate the affected side. These radiographs provide the estimation of leg length discrepancy, femoral offset and center of rotation needed to reconstruct hip biomechanics.

UTS templates in 115% magnification are offered in accordance with the common enlargement of x-ray image. The UTS stem is designed to provide immediate geometrical stability dependent upon on medial and lateral cortex contact. Templating the prosthesis size that best fits the metaphysis canal area is recommended. Standard and high offset neck options are available for all stem sizes. The high offset neck provides femoral lateralization, increasing stem offset while maintaining leg length. Multiple head offsets are also offered for the adjustment of neck length. The final determination of implant choice should take into account the acetabular cup position, cup size, and hip center.



A. Femoral Osteotomy

Align the **UTS Neck Resection Guide** with the anatomical axis of the femoral canal. Preoperatively determine the neck resection level by measuring the distance above the lesser trochanter (about 10-15 mm) or by measuring the distance from the piriformis fossa to the shoulder of the stem. Mark the cut line using electrocautery, then complete the femoral neck resection with a power saw. Connect the **Femoral Head Extractor** with **Modular T-Handle** or power tool then remove the femoral head.



Instruments



UTS Neck Resection Guide



Femoral Head Extractor



Modular T-Handle

B. Femoral Canal Accessing

Utilize the modular **Femoral Cutting Chisel** with **Broach Handle** for adequate lateral/posterior piriformis fossa initial entry into femoral canal.



Instruments



Femoral Cutting Chisel



Straight Broach Handle



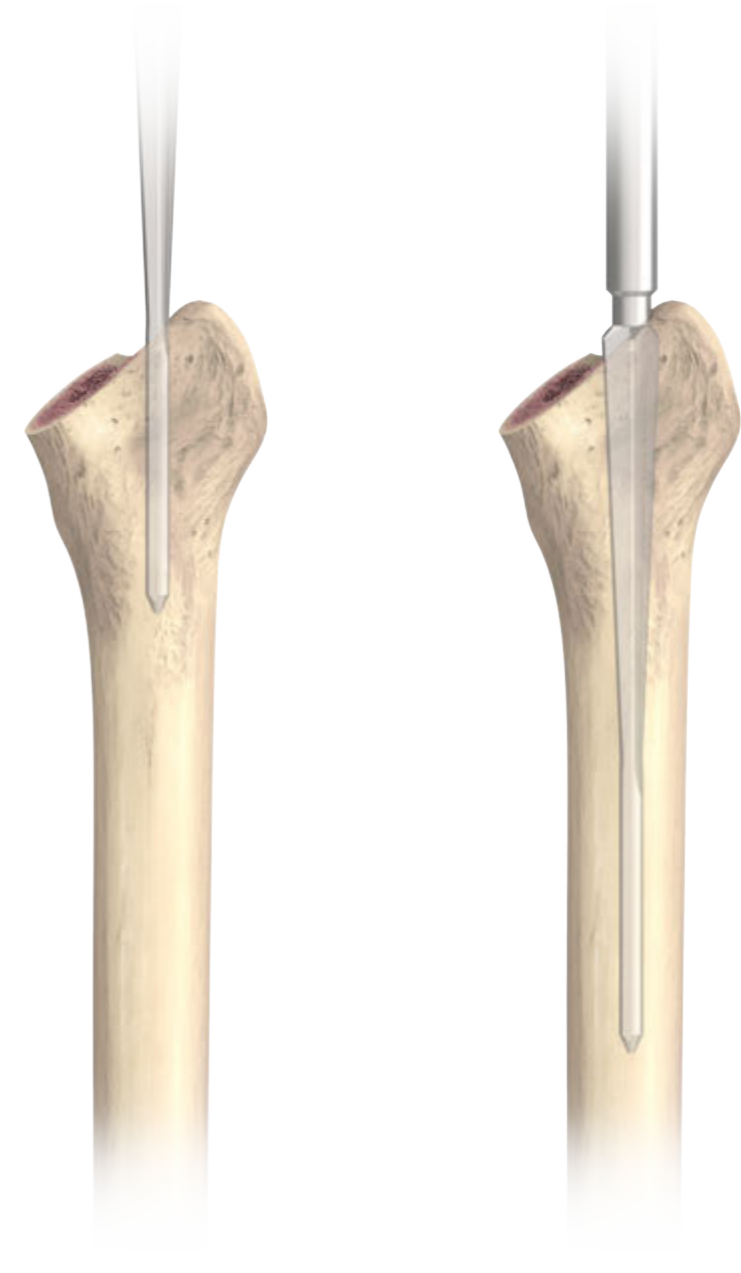
Offset Broach Handle



Dual Offset Broach Handle

C. Canal Reaming

The **Starter Reamer** is used with the **Modular T-Handle** or power tool to open the femoral canal and to help ensure the correct reamer alignment within the femoral anatomical axis.



Instruments



Starter Reamer



Modular T-Handle

D. Lateralization

Lateralization of the canal entry is important to prevent medial shift alignment of the prosthetic stem during insertion. Utilize the **Canal Finder Rasp** manually to enlarge the canal laterally beneath the greater trochanter. This step helps to guide the axis of the femur for subsequent broaching and stem implantation.



Instruments

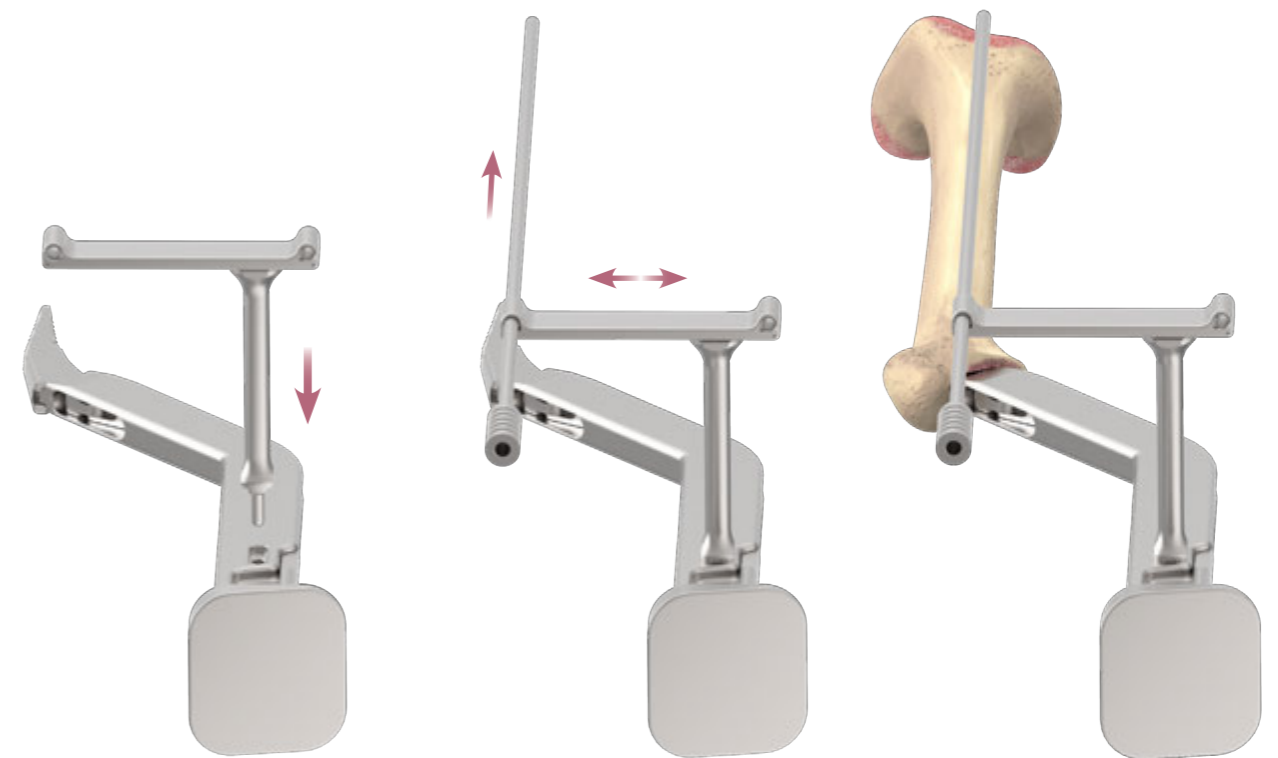


Canal Finder Rasp

E. Alignment Check

Multiple broach handle options are provided to accommodate different surgical approaches for hip replacement.

Attach the first **UTS Starter Broach** to the **Broach Handle**. UTS Stem provides an external system, consisting of an **EM Alignment Guide** which can be quickly attached to the **Broach Handle**. Accurate alignment is achieved when the axis of the **Alignment Rod** is parallel to the femoral axis.



Instruments



UTS Starter Broach



Straight Broach Handle



Offset Broach Handle



Dual Offset Broach Handle



EM alignment guide



Alignment rod

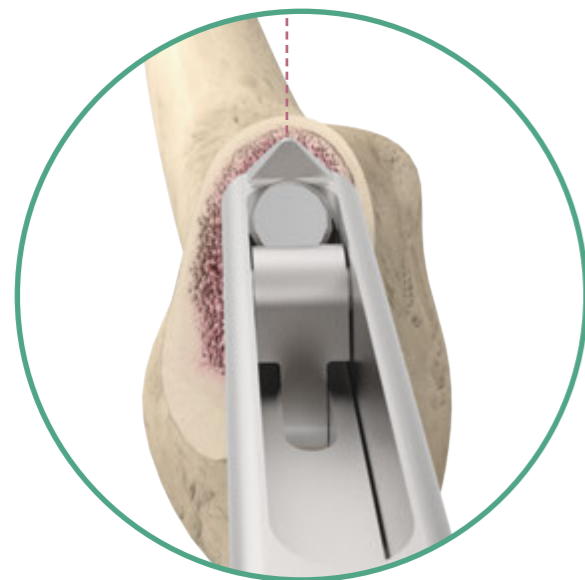
F. Canal Broaching

Utilize the anteversion indicator on the handle to set an ideal anteversion. Sequentially enlarge the canal with the **UTS Broach** along the created orientation until the ideal size is achieved. The ML dimensions of the **UTS Broach** are identical to that of the implant. There is a 0.75 mm difference on each side of broach between sizes.

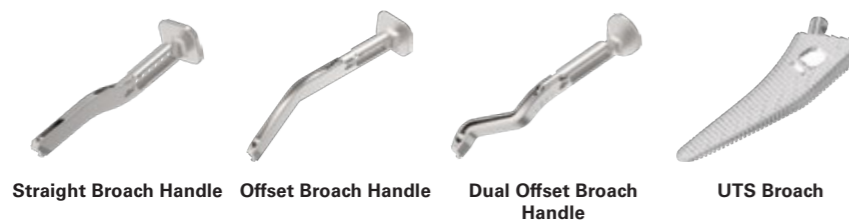
Note :

It is suggested that the broach be fully advanced in the canal before broaching is begun, which may minimize the risk of creating a new path.

Anteversion Indicator

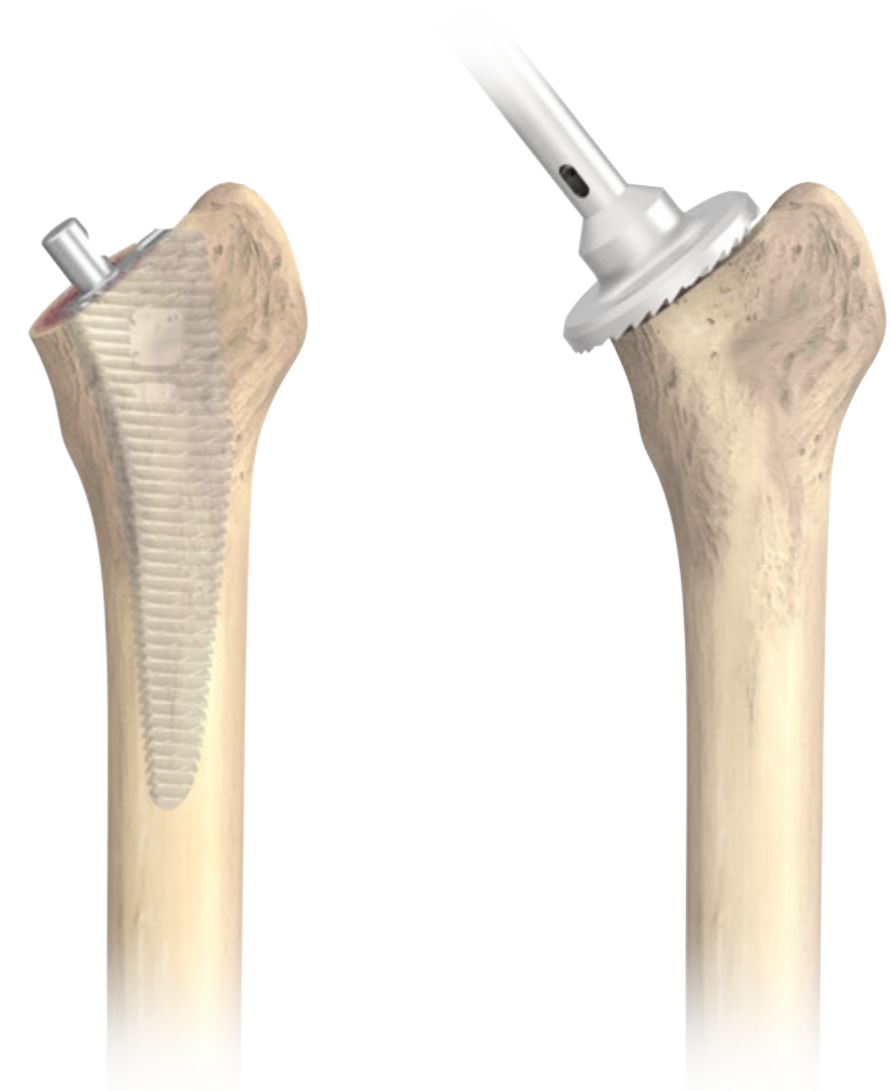


Instruments

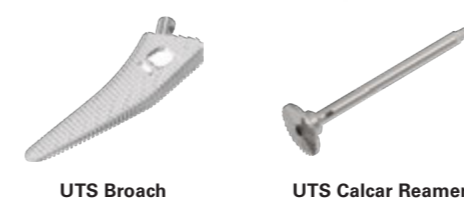


G. Calcar Preparation

When the final broach is seated, choose the corresponding **UTS Calcar Reamer** and guide the reamer over the **UTS Broach** trunnion ensuring that the **UTS Calcar Reamer** is axially aligned with the trunnion and is stable.

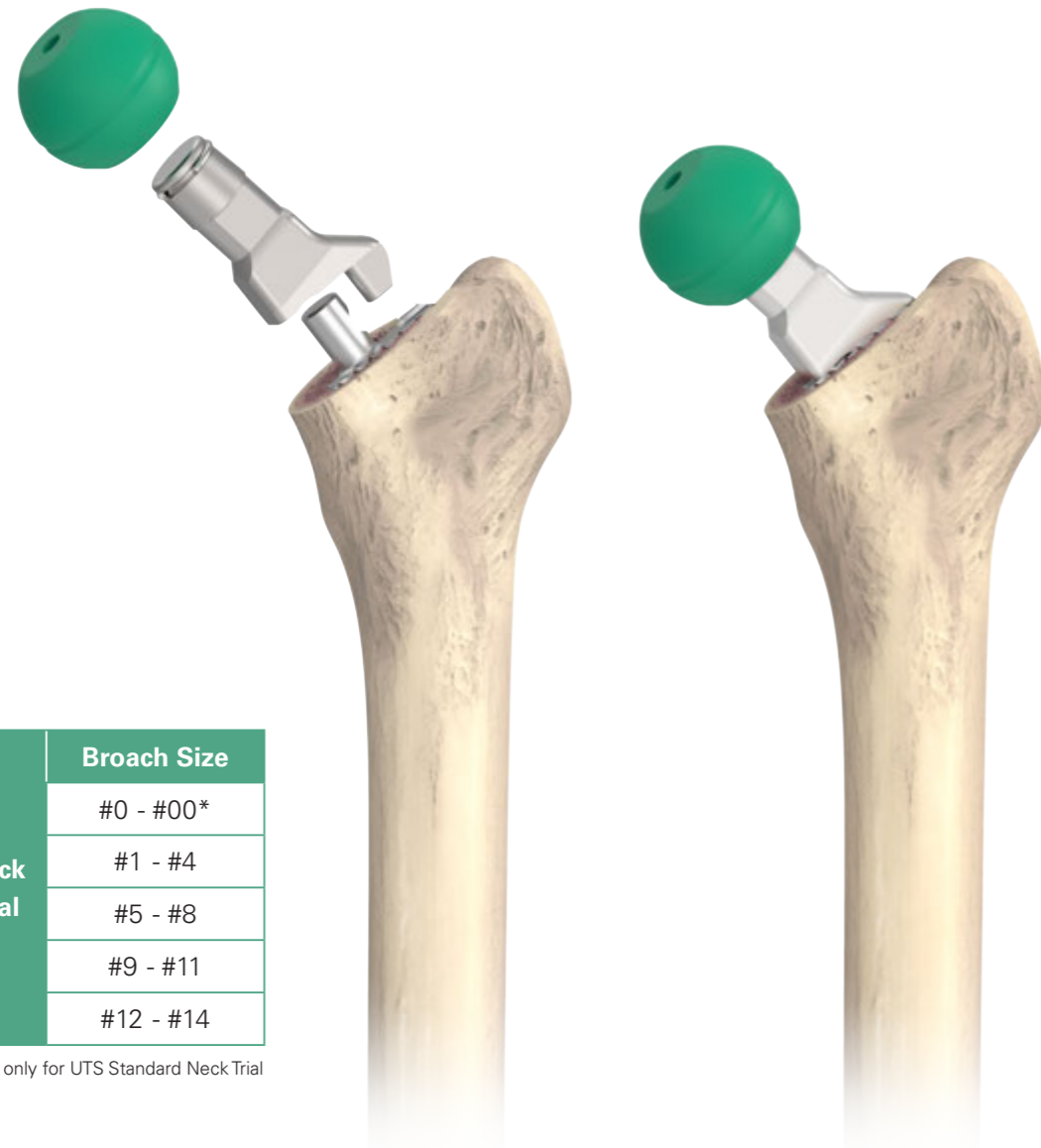


Instruments



H.Trial Reduction

Assemble the appropriate size of standard or high offset **UTS Neck Trial** onto the broach. Perform the trial reduction using the **Femoral Head Trial** with desired diameter and neck length. Any correction of selected implant size can be made during the reassessment of leg length and joint biomechanics if required.



| Neck Trial | Broach Size |
|------------|-------------|
| | #0 - #00* |
| | #1 - #4 |
| | #5 - #8 |
| | #9 - #11 |
| | #12 - #14 |

*#0-00 only for UTS Standard Neck Trial

Instruments



UTS Broach



UTS Neck Trial

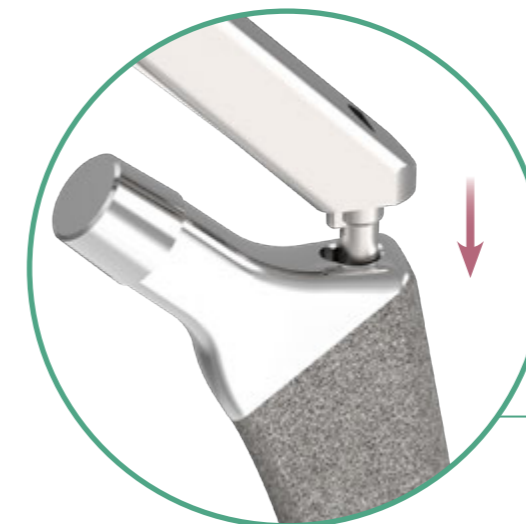


Femoral Head Trial

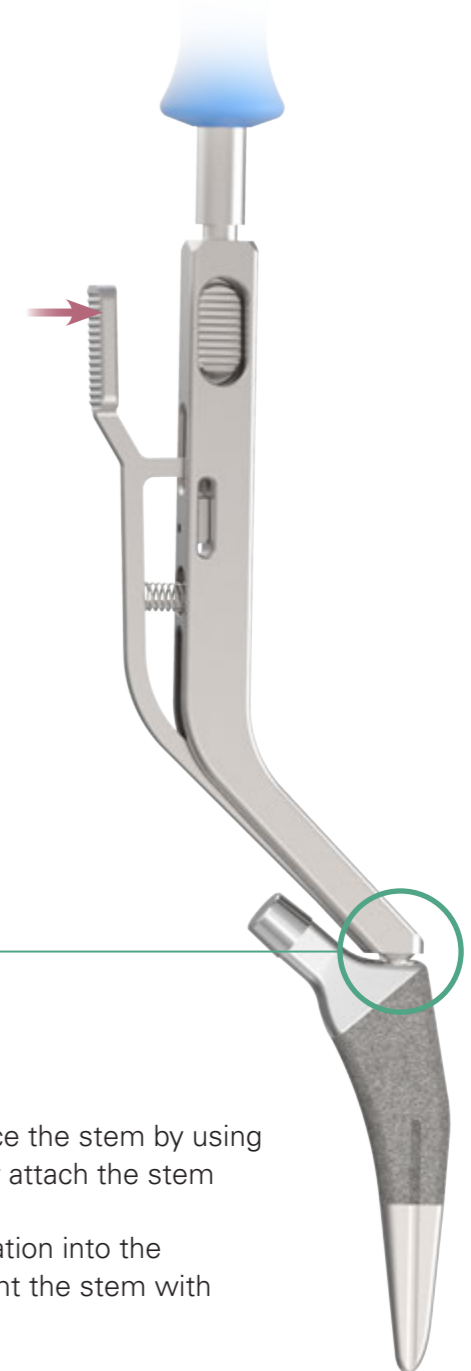
I.Stem Insertion

Caution :

The **Quick Connect Holder** is designed to position the implant, not for final impaction. Please **impact gently** to avoid instrument breakage.



After trial reduction, remove the broach and introduce the stem by using the **Quick Connect Holder**. Use the holder to firmly attach the stem via the insertion hole on the stem shoulder. Gently tap the holder to achieve initial stem implantation into the medullary canal. Proper care should be taken to orient the stem with proper alignment and version.



Instruments



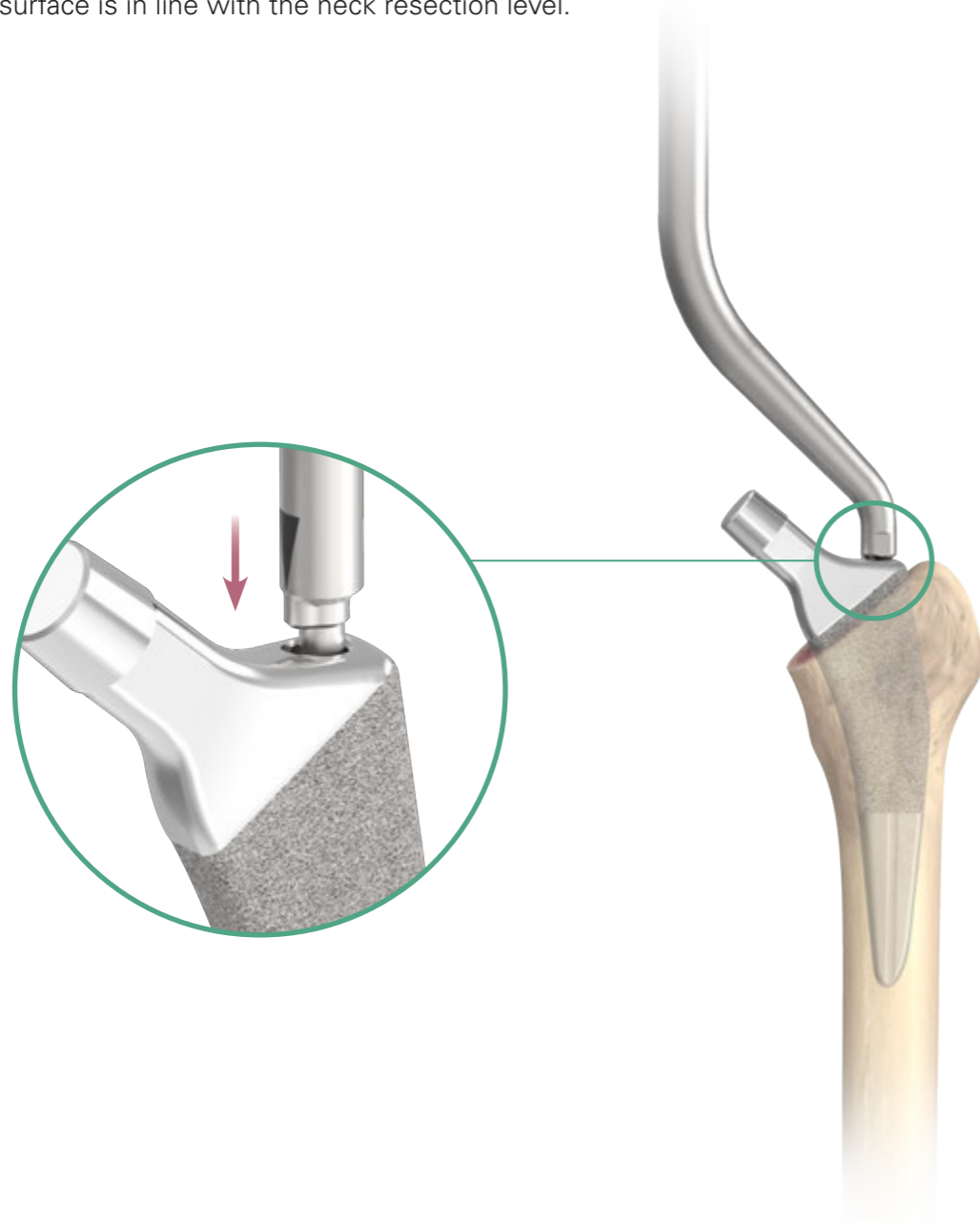
Quick Connect Holder



Quick Connect Holder, Offset

J. Stem Impaction

Use **Straight** or **Curved Stem Impactors** to further advance the stem into the endosteal canal. The prosthesis should be seated until the most proximal portion of the coating surface is in line with the neck resection level.



Instruments



Straight Stem Impactor



Curved Stem Impactor

K. Femoral Head Impaction

Perform a final trial reduction to confirm stability and leg length by using the **Femoral Head Trials**. After the appropriate femoral head size has been determined, place it onto the cleaned and dried taper by twisting it on by hand.

Connect the **Femoral Head Impactor** and **Universal Handle** and moderately impact the femoral head until it is firmly seated. Clean the bearing surface then reduce the hip with the **Pusher**.



Instruments



Femoral Head Trial



Femoral Head Impactor



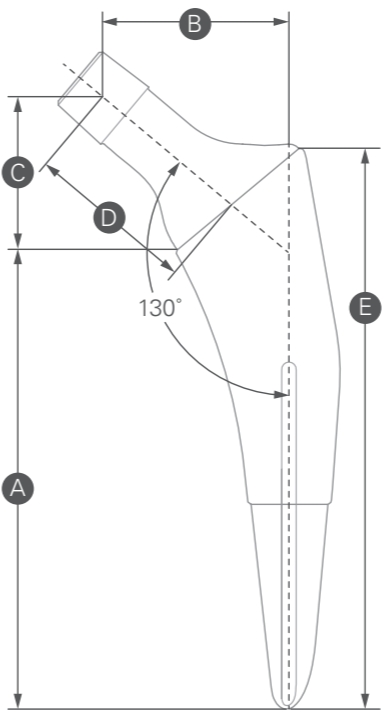
Universal Handle



Pusher

Order Information

| Catalog Number | | Description |
|-------------------|-------------|-------------|
| UTS Stem Standard | | |
| High Offset | | |
| Standard | High Offset | |
| 1106 - 5099 | — | # 00 |
| 1106 - 5000 | — | # 0 |
| 1106 - 5001 | 1106 - 5201 | # 1 |
| 1106 - 5002 | 1106 - 5202 | # 2 |
| 1106 - 5003 | 1106 - 5203 | # 3 |
| 1106 - 5004 | 1106 - 5204 | # 4 |
| 1106 - 5005 | 1106 - 5205 | # 5 |
| 1106 - 5006 | 1106 - 5206 | # 6 |
| 1106 - 5007 | 1106 - 5207 | # 7 |
| 1106 - 5008 | 1106 - 5208 | # 8 |
| 1106 - 5009 | 1106 - 5209 | # 9 |
| 1106 - 5010 | 1106 - 5210 | # 10 |
| 1106 - 5011 | 1106 - 5211 | # 11 |
| 1106 - 5012 | 1106 - 5212 | # 12 |
| 1106 - 5013 | 1106 - 5213 | # 13 |
| 1106 - 5014 | 1106 - 5214 | # 14 |




| Size | A Stem Length | B Offset | C Vertical Height | D Neck Length | E Lateral Length |
|-------------|------------------|-------------|----------------------|------------------|---------------------|
| Standard | | | | | |
| #00 | 73.5 | 30 | 23.9 | 25.9 | 91 |
| #0 | 76.3 | 31 | 24.9 | 27.1 | 94 |
| #1 | 77.8 | 32 | 25.9 | 28.3 | 96 |
| #2 | 81.4 | 33 | 26.9 | 29.5 | 100 |
| #3 | 83.7 | 34 | 27.9 | 30.6 | 103 |
| #4 | 85.8 | 35 | 28.9 | 31.8 | 106 |
| #5 | 88.0 | 36 | 29.9 | 32.9 | 109 |
| #6 | 90.9 | 37 | 30.9 | 34.0 | 112 |
| #7 | 93.3 | 38 | 31.9 | 35.1 | 115 |
| #8 | 95.6 | 39 | 32.9 | 36.2 | 118 |
| #9 | 98.2 | 40.5 | 34.2 | 37.8 | 121.3 |
| #10 | 100.7 | 42 | 35.4 | 39.4 | 124.5 |
| #11 | 103.3 | 43.5 | 36.7 | 41.0 | 127.8 |
| #12 | 105.9 | 45 | 37.9 | 42.6 | 131 |
| #13 | 108.3 | 46.5 | 39.2 | 44.2 | 134.3 |
| #14 | 110.7 | 48 | 40.4 | 45.8 | 137.5 |
| High Offset | | | | | |
| #1 | 77.8 | 39 | 25.9 | 32.9 | 96 |
| #2 | 81.4 | 40 | 26.9 | 34.0 | 100 |
| #3 | 83.7 | 41 | 27.9 | 35.2 | 103 |
| #4 | 85.8 | 42 | 28.9 | 36.3 | 106 |
| #5 | 88.0 | 43 | 29.9 | 37.5 | 109 |
| #6 | 90.9 | 44 | 30.9 | 38.6 | 112 |
| #7 | 93.3 | 45 | 31.9 | 39.7 | 115 |
| #8 | 95.6 | 46 | 32.9 | 40.8 | 118 |
| #9 | 98.2 | 47.5 | 34.2 | 42.4 | 121.3 |
| #10 | 100.7 | 49 | 35.4 | 44.0 | 124.5 |
| #11 | 103.3 | 50.5 | 36.7 | 45.6 | 127.8 |
| #12 | 105.9 | 52 | 37.9 | 47.2 | 131 |
| #13 | 108.3 | 53.5 | 39.2 | 48.8 | 134.3 |
| #14 | 110.7 | 55 | 40.4 | 50.3 | 137.5 |

Unit: mm


| Catalog Number | | Description |
|-----------------------|-------------|-------------|
| UTS Stem, HA Standard | | |
| High Offset | | |
| Standard | High Offset | |
| 1106 - 7099 | — | # 00 |
| 1106 - 7000 | — | # 0 |
| 1106 - 7001 | 1106 - 7201 | # 1 |
| 1106 - 7002 | 1106 - 7202 | # 2 |
| 1106 - 7003 | 1106 - 7203 | # 3 |
| 1106 - 7004 | 1106 - 7204 | # 4 |
| 1106 - 7005 | 1106 - 7205 | # 5 |
| 1106 - 7006 | 1106 - 7206 | # 6 |
| 1106 - 7007 | 1106 - 7207 | # 7 |
| 1106 - 7008 | 1106 - 7208 | # 8 |
| 1106 - 7009 | 1106 - 7209 | # 9 |
| 1106 - 7010 | 1106 - 7210 | # 10 |
| 1106 - 7011 | 1106 - 7211 | # 11 |
| 1106 - 7012 | 1106 - 7212 | # 12 |
| 1106 - 7013 | 1106 - 7213 | # 13 |
| 1106 - 7014 | 1106 - 7214 | # 14 |

Femoral Head

| | Catalog Number | Description (mm) | |
|---|----------------|------------------|-------|
| U2 Femoral Head  | 1206 - 1122 | * Ø 22 | + 0 |
| | 1206 - 1322 | * Ø 22 | + 3 |
| | 1206 - 1522 | * Ø 22 | + 6 |
| | 1206 - 1722 | * Ø 22 | + 9 |
| | 1206 - 1026 | Ø 26 | - 2 |
| | 1206 - 1126 | Ø 26 | + 0 |
| | 1206 - 1326 | Ø 26 | + 3 |
| | 1206 - 1526 | Ø 26 | + 6 |
| | 1206 - 1726 | Ø 26 | + 9 |
| | 1206 - 1028 | Ø 28 | - 3 |
| | 1206 - 1128 | Ø 28 | + 0 |
| | 1206 - 1228 | Ø 28 | + 2.5 |
| | 1206 - 1428 | Ø 28 | + 5 |
| | 1206 - 1628 | Ø 28 | + 7.5 |
| | 1206 - 1828 | Ø 28 | + 10 |
| | 1206 - 1032 | Ø 32 | - 3 |
| | 1206 - 1132 | Ø 32 | + 0 |
| | 1206 - 1232 | Ø 32 | + 2.5 |
| | 1206 - 1432 | Ø 32 | + 5 |
| | 1206 - 1632 | Ø 32 | + 7.5 |
| | 1206 - 1832 | Ø 32 | + 10 |
| | 1206 - 1036 | Ø 36 | - 3 |
| | 1206 - 1136 | Ø 36 | + 0 |
| | 1206 - 1236 | Ø 36 | + 2.5 |
| | 1206 - 1436 | Ø 36 | + 5 |
| | 1206 - 1636 | Ø 36 | + 7.5 |
| | 1206 - 1836 | Ø 36 | + 10 |

* The actual spherical diameter of a 22 mm metal head is 22.2 mm.

Femoral Head

| | Catalog Number | Description (mm) | | |
|---|----------------|------------------|----|-------|
| BIOLOX® <i>delta</i> Ceramic Head  | 1203 - 5028 | Ø 28 | S | - 2.5 |
| | 1203 - 5228 | Ø 28 | M | + 1 |
| | 1203 - 5428 | Ø 28 | L | + 4 |
| | 1203 - 5032 | Ø 32 | S | - 3 |
| | 1203 - 5232 | Ø 32 | M | + 1 |
| | 1203 - 5432 | Ø 32 | L | + 5 |
| | 1203 - 5632 | Ø 32 | XL | + 8 |
| | 1203 - 5036 | Ø 36 | S | - 3 |
| | 1203 - 5236 | Ø 36 | M | + 1 |
| | 1203 - 5436 | Ø 36 | L | + 5 |
| | 1203 - 5636 | Ø 36 | XL | + 9 |
| | 1203 - 5040 | Ø 40 | S | - 3 |
| | 1203 - 5240 | Ø 40 | M | + 1 |
| | 1203 - 5440 | Ø 40 | L | + 5 |
| | 1203 - 5640 | Ø 40 | XL | + 9 |

*BIOLOX® is a registered trademark of the CeramTec Group, Germany



Each Step
We Care

Please note that this Surgical Technique Guide has been authored in the English language. Any translations into other languages have not been reviewed or approved by United Orthopedic Corporation and their accuracy cannot be confirmed. Any translated guide should be reviewed carefully prior to use and questions regarding a Surgical Technique Guide should be directed to United Orthopedic Corporation at unitedorthopedic.com/contact

The CE mark is valid only if it is also printed on the product label.

