UNITED ORTHOPEDIC®

UTS™ Stem

Femoral Hip System

Surgical Technique Guide

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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

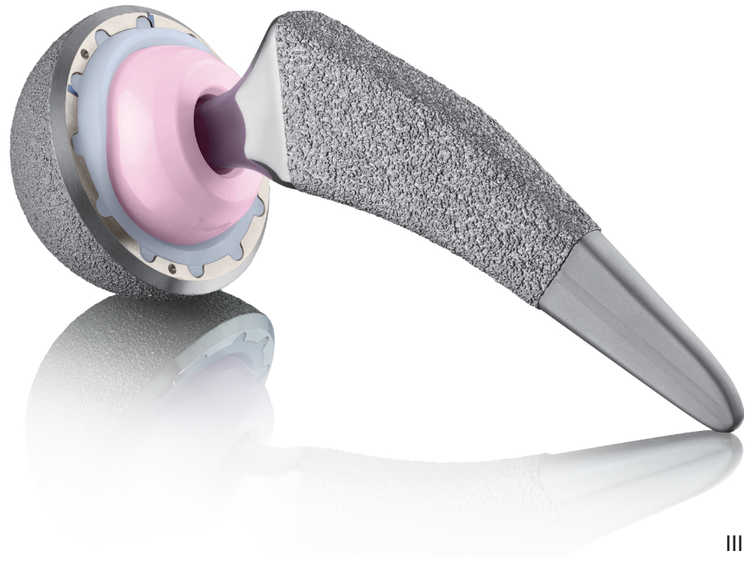
This device is indicated for use in total hip replacement or bipolar hip replacement undergoing primary and revision surgery for the following conditions:

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.

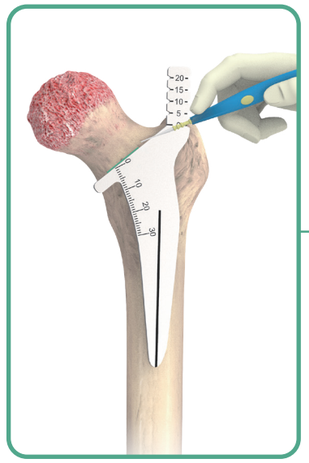
CONTRAINDICATIONS

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.

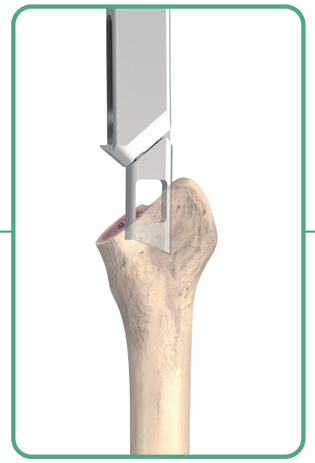
Please note, this Surgical Protocol is consistent with our validated labeling. It is not intended to substitute for each surgeon's individual medical judgment regarding patient care. It is intended to be a reference document to be utilized in support of total hip arthroplasty using United Orthopedics'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



Surgical Overview



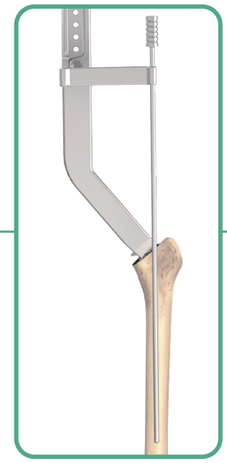
A. Femoral Osteotomy



B. Femoral Canal Accessing

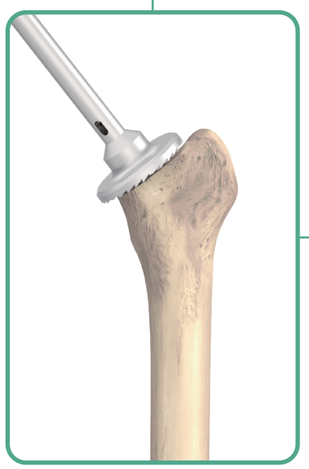
C. Canal Reaming

D. Lateralization

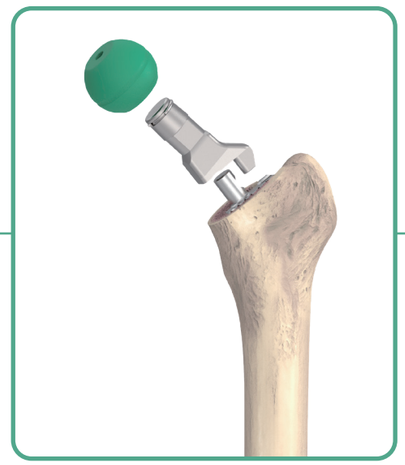


E. Alignment Check

F. Canal Broaching

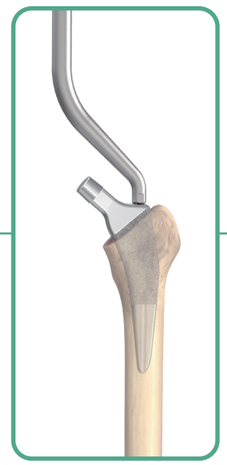


G. Calcar Preparation

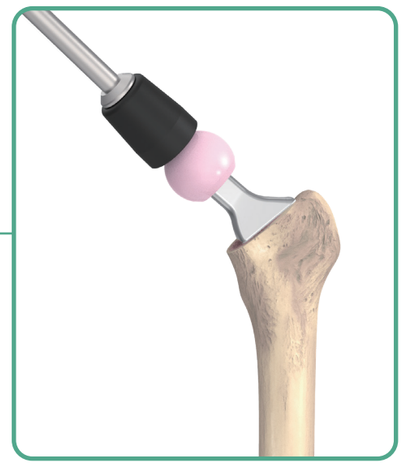


H. Trial Reduction

I. Stem Insertion



J. Stem Impaction

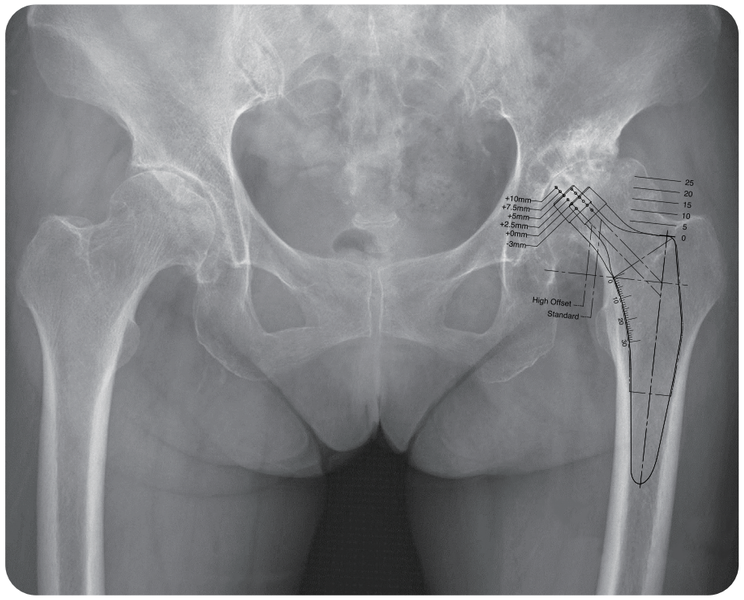


K. Femoral Head Impaction

Preoperative Planning and Templating

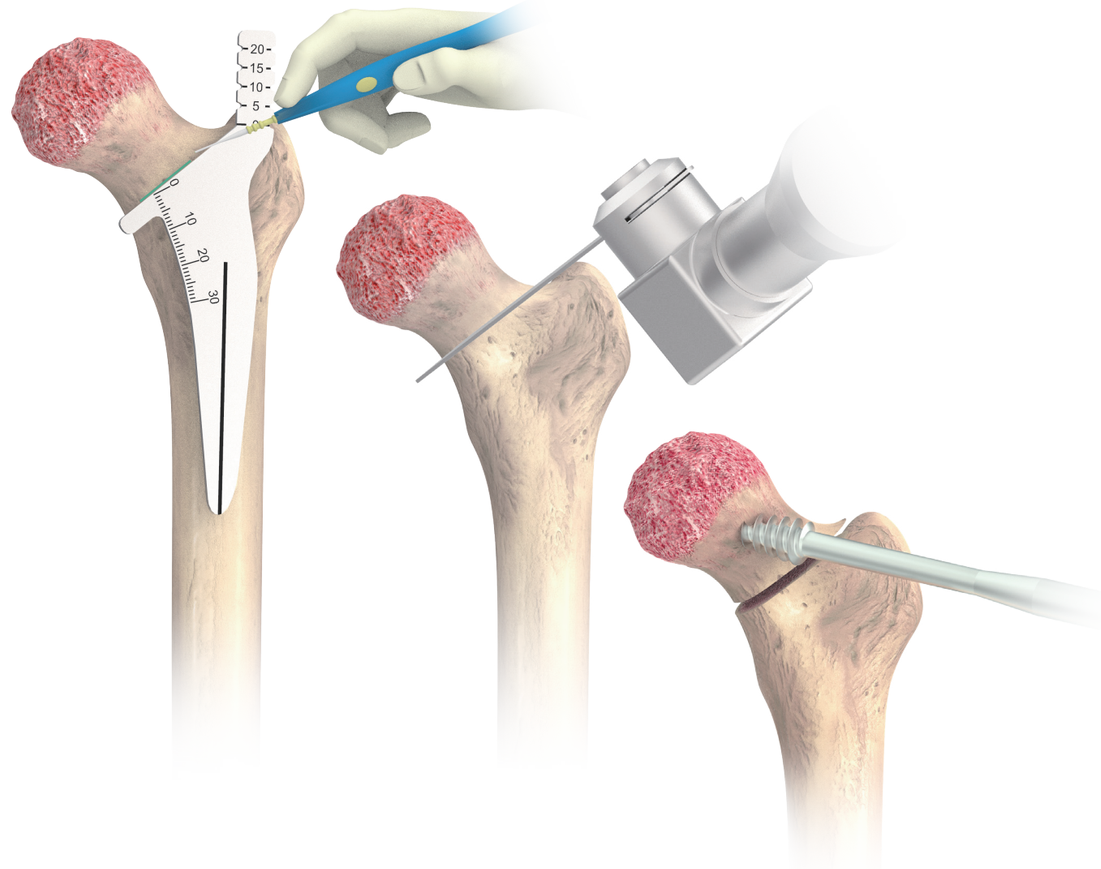
Preoperative planning is essential for determining the optimal stem size, neck resection level and the appropriate neck length. Making an accurate femoral component selection begins with thorough radiographic evaluation of the involved femur, both A/P view and lateral view. The A/P radiographic image 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

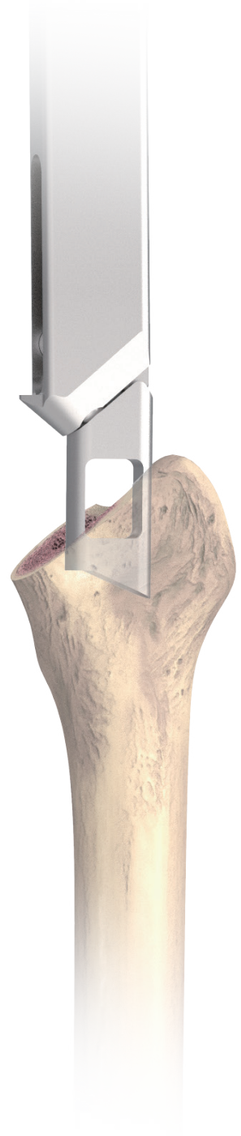
UTS Neck Resection Guide

Femoral Head Extractor

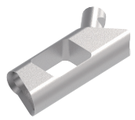
Modular T-Handle

B. Femoral Canal Accessing

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



Instruments



Femoral Cutting Chisel

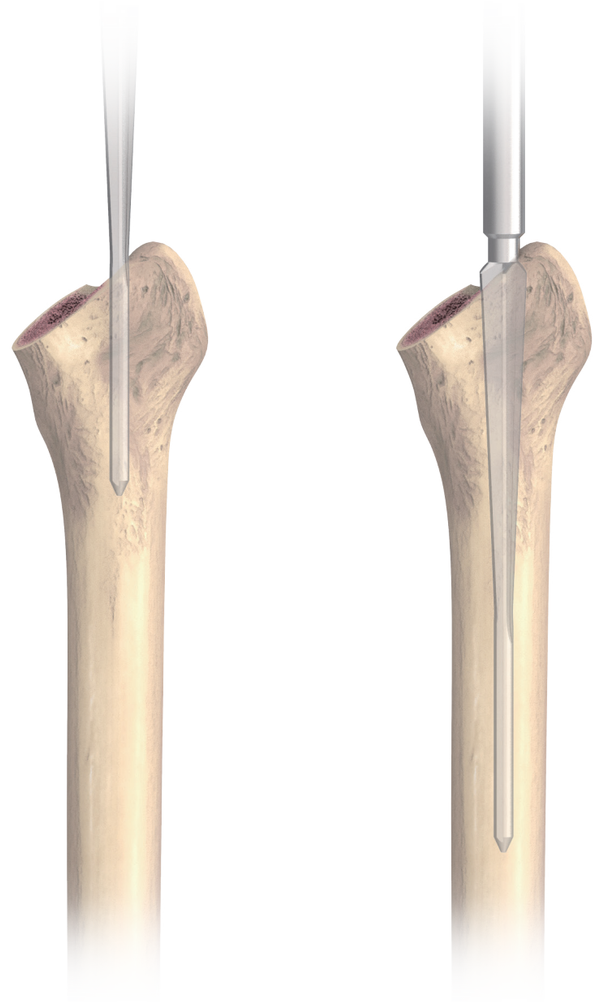
Straight Broach Handle

Offset Broach Handle

Dual Offset Broach Handle

C. Canal Reaming

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



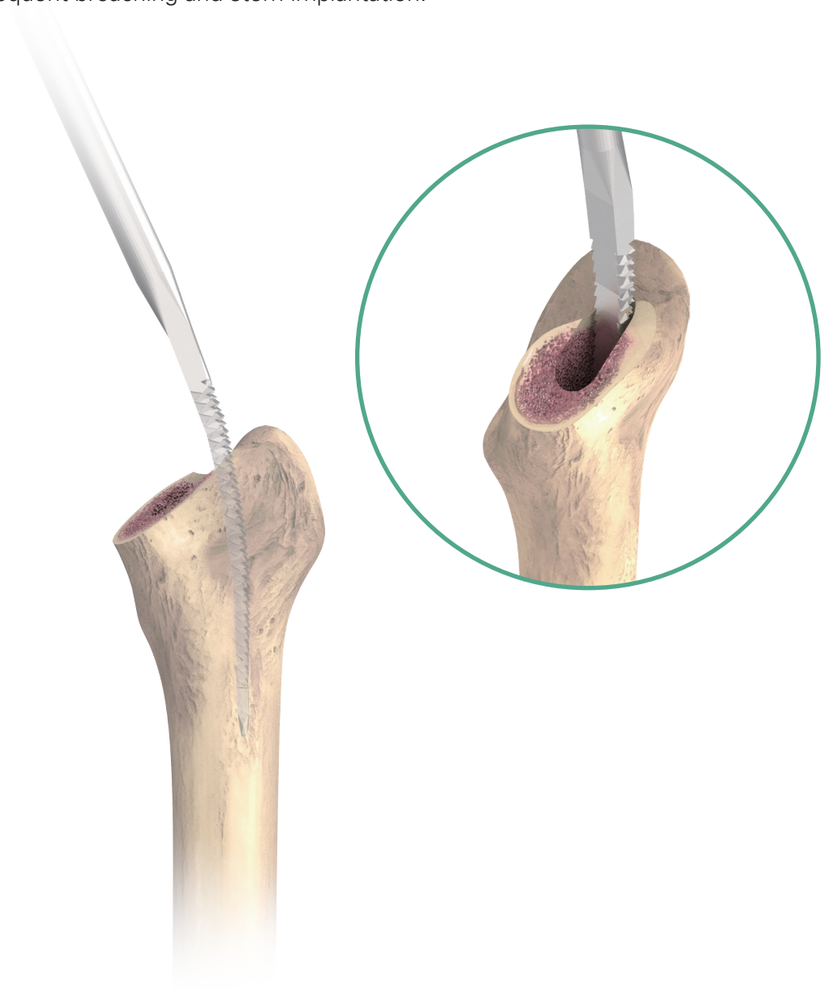
Instruments

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.



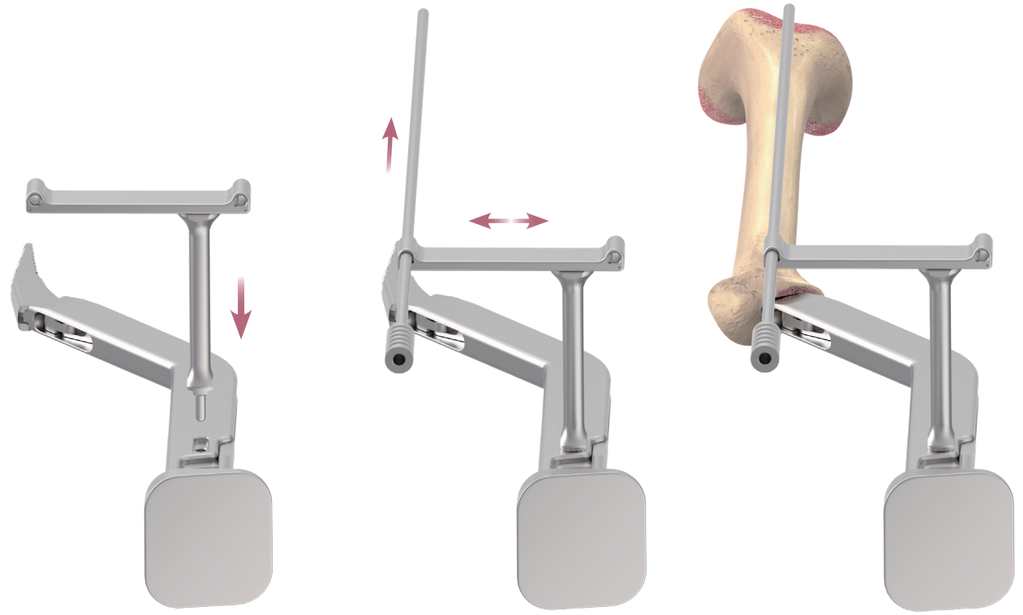
Instruments

Canal Finder Rasp

E. Alignment Check

Multiple broach handles 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

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.

Instruments

Straight Broach Handle

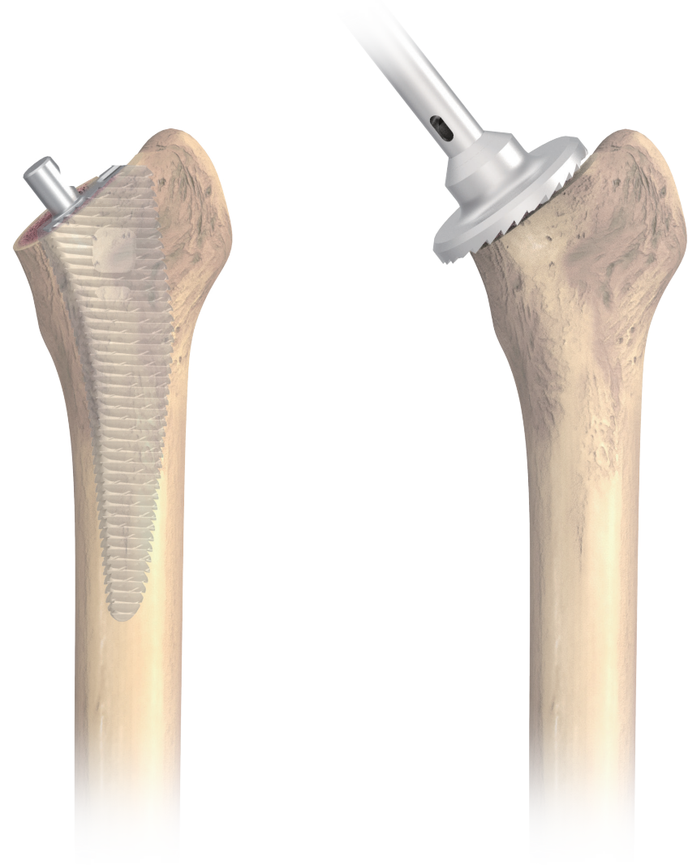
Offset Broach Handle

Dual Offset Broach Handle

UTS Broach

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.



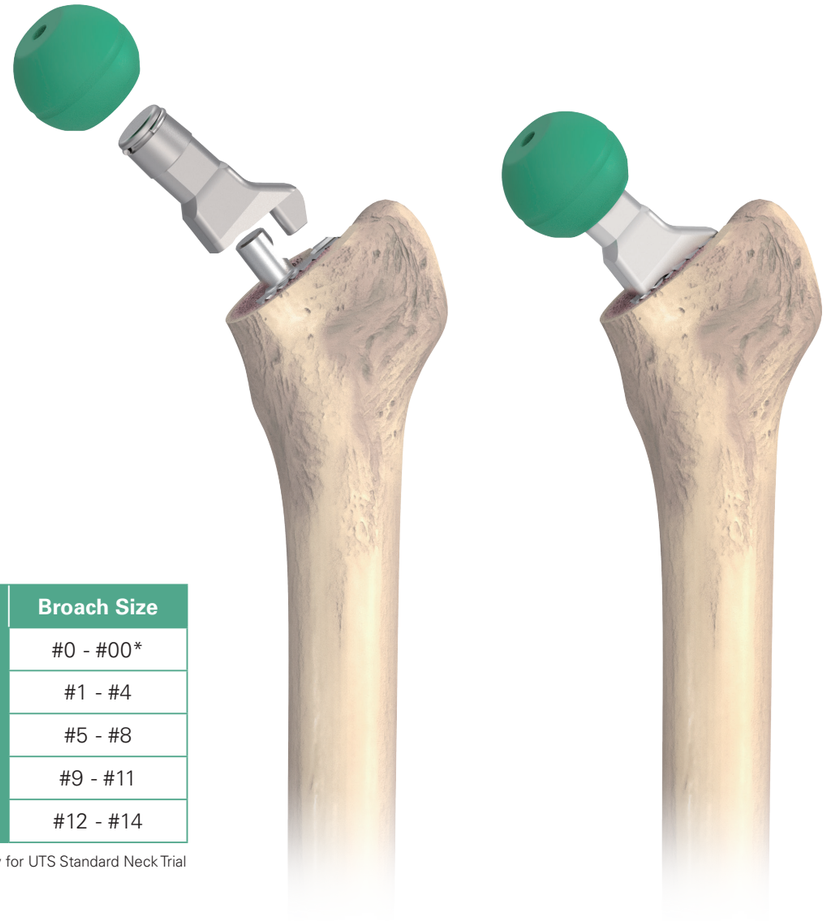
Instruments

UTS Broach

UTS Calcar Reamer

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 the 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.



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

*#0-00 only for UTS Standard Neck Trial

Instruments

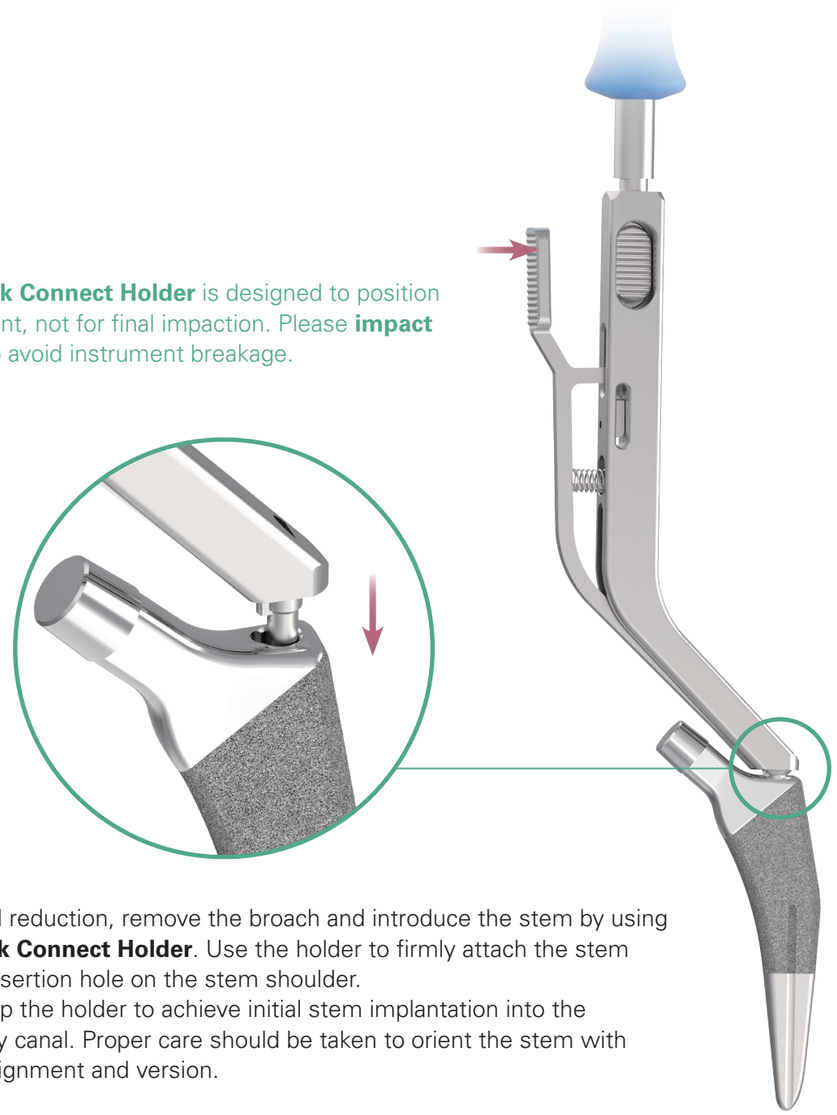
UTS Broach

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.

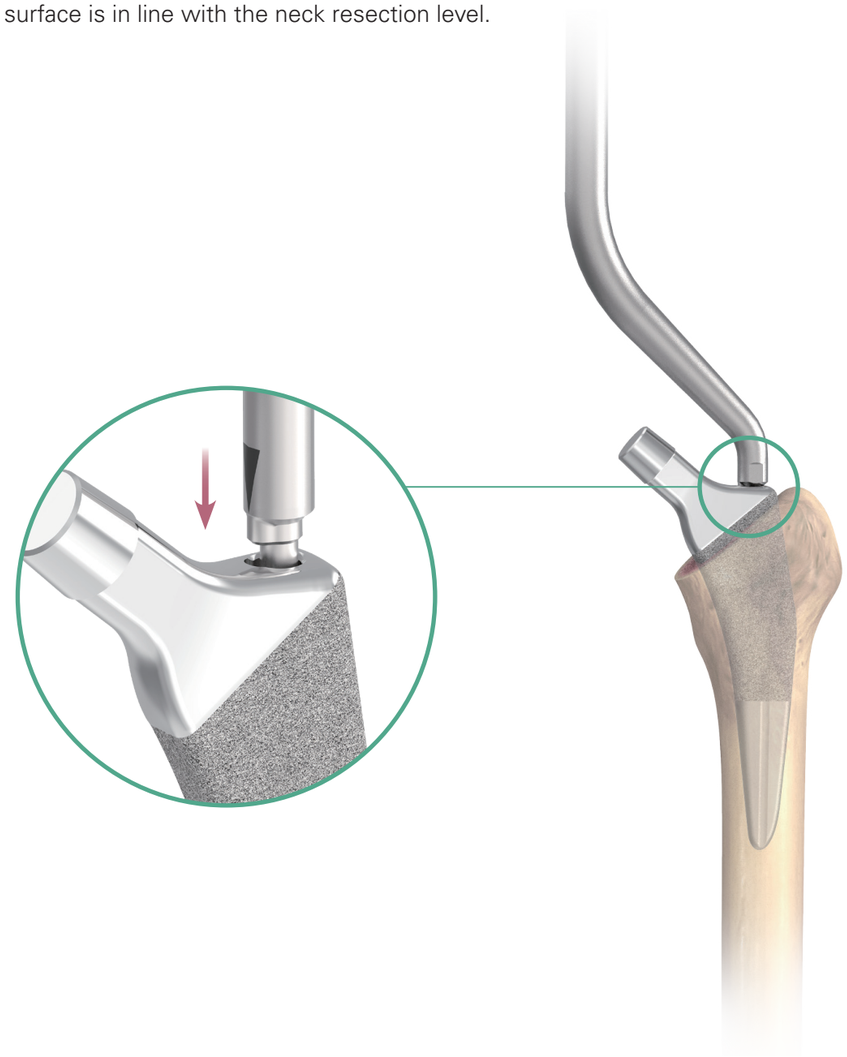
Instruments

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

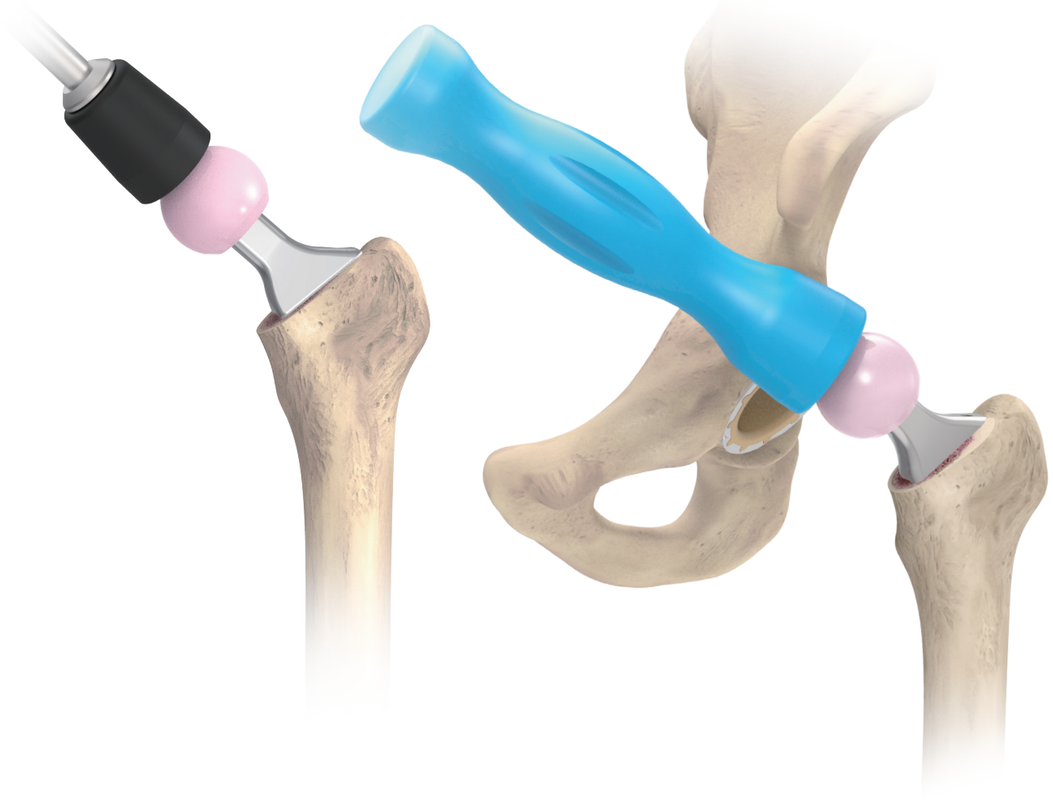
Straight Stem Impactor

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

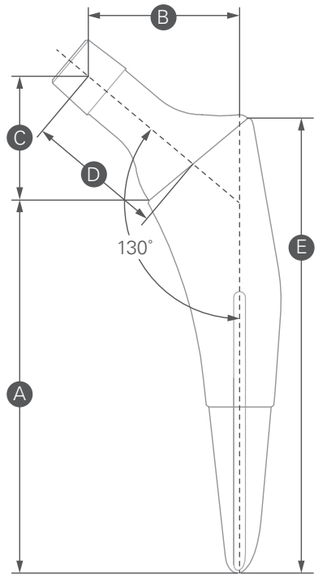
Femoral Head Impactor

Universal Handle

Pusher

Order Information

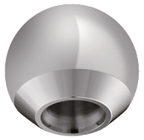
	Catalog Number		Description
UTS Stem Standard	**Standard**	**High Offset**	
	1106 - 5099	–	# 00
	1106 - 5000	–	# 0
	1106 - 5001	1106 - 5201	# 1
	1106 - 5002	1106 - 5202	# 2
	1106 - 5003	1106 - 5203	# 3
	1106 - 5004	1106 - 5204	# 4
	1106 - 5005	1106 - 5205	# 5
	1106 - 5006	1106 - 5206	# 6
	1106 - 5007	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
High Offset			
			



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

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 head is 22.2 mm.

Femoral Head

	Catalog Number	Description (mm)		
BIOLOX® *delta* Ceramic Head	1203 - 5022	* Ø 22	S	+ 1
	1203 - 5222	* Ø 22	M	+ 3
	1203 - 5422	* Ø 22	L	+ 5
	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

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

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UNITED ORTHOPEDIC®

Each Step
We Care

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CE 2797

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