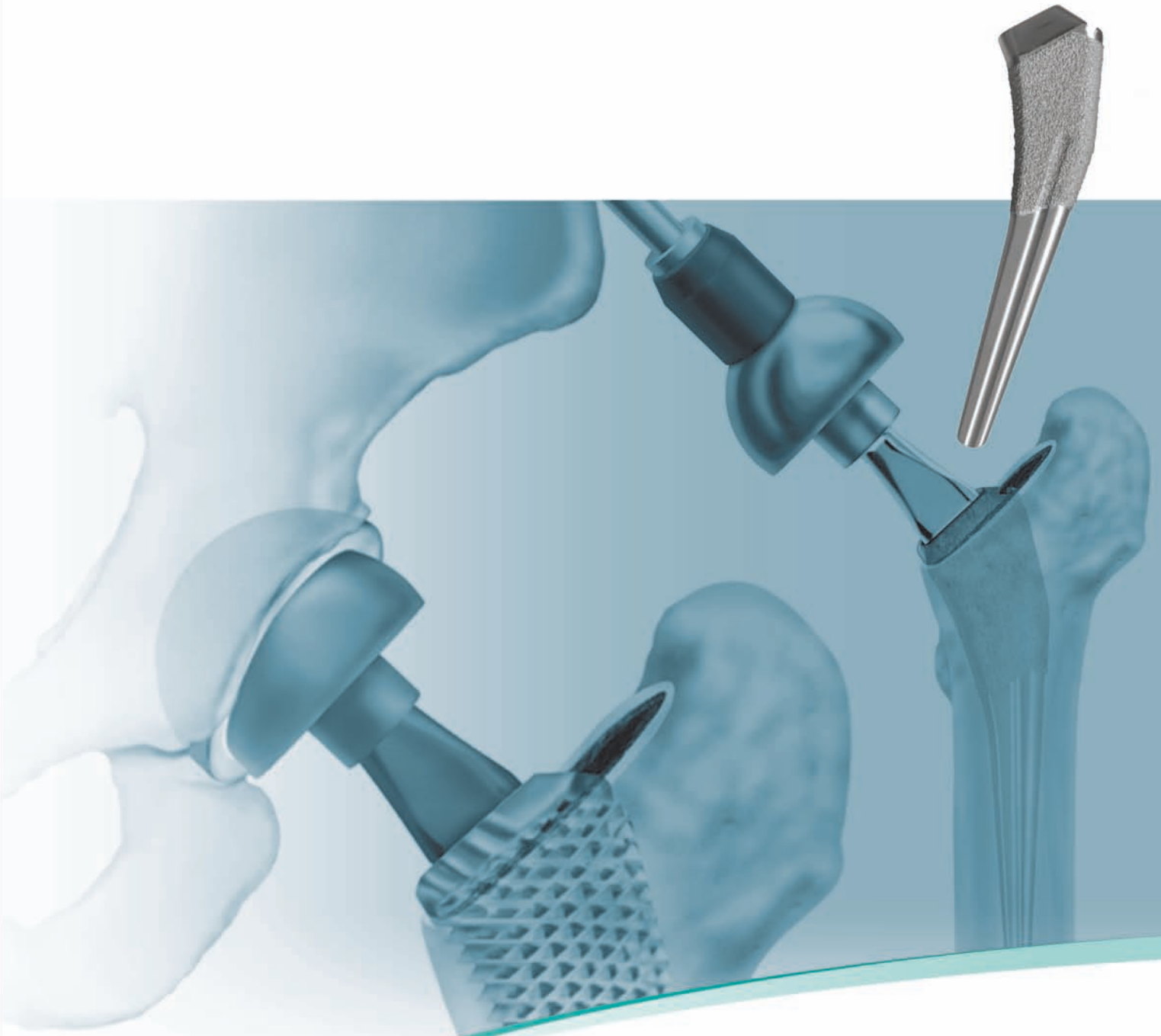


PROFEMUR® TL

Total Hip System

SURGICAL TECHNIQUE



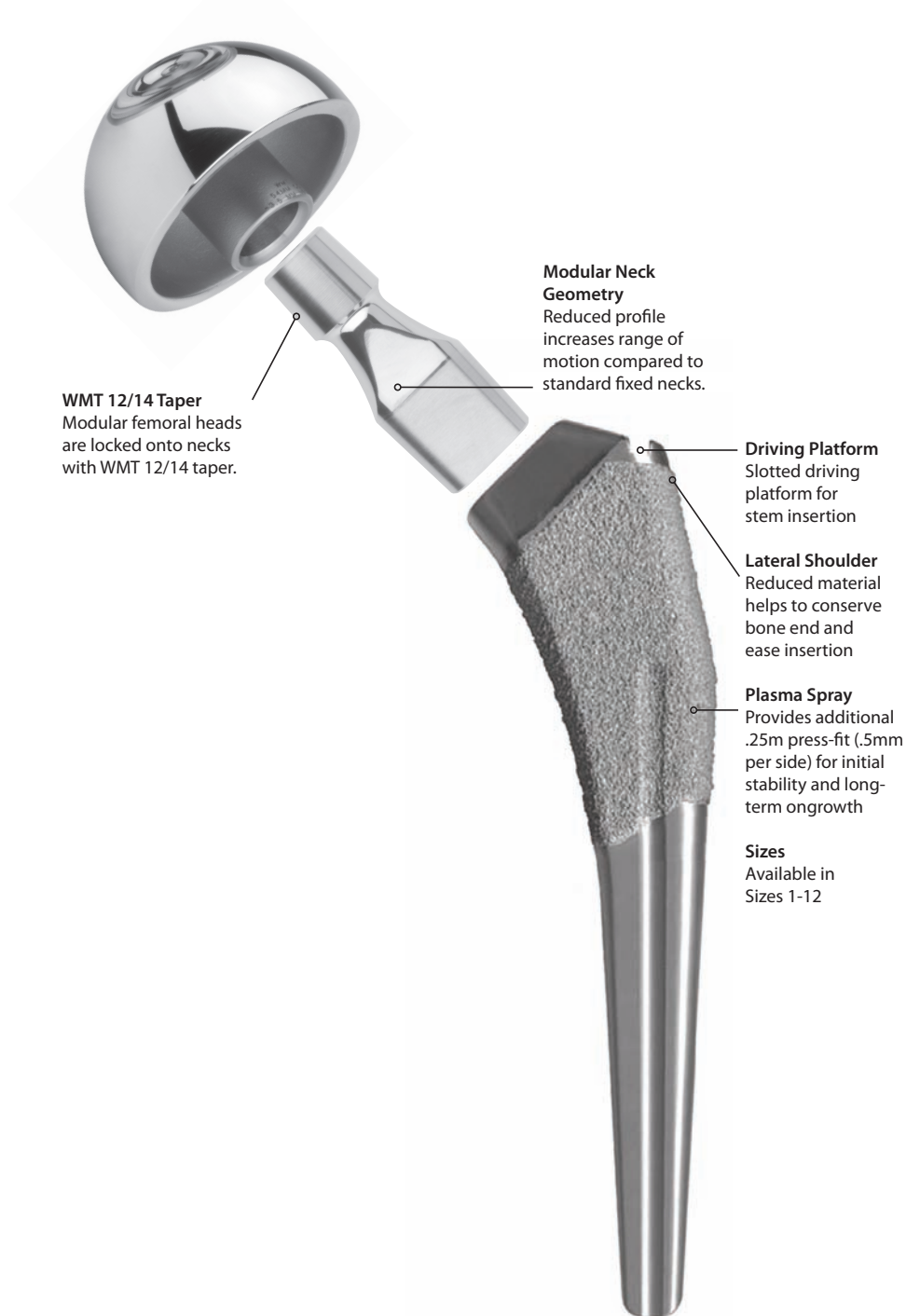
WRIGHT.

Contents

Chapter 1	3	Product Information
	3	Design Features of the PROFEMUR® TL Total Hip System
	4	Implant Specifications: PROFEMUR® TL Stems
	5	Implant Specifications: PROFEMUR® Modular Necks
Chapter 2	6	Preoperative Planning
Chapter 3	8	Surgical Technique
	8	Femoral Neck Osteotomy
	10	Femoral Broaching
	11	Trial Reduction
	12	Implant Insertion
	13	Modular Neck and Femoral Head Assembly
	15	Technique Overview
Chapter 4	16	Ordering Information
	16	PROFEMUR® TL Stems
	16	PROFEMUR® Modular Necks
	17	A-CLASS® Advanced Metal with BFH® Technology Femoral Heads
	17	CONSERVE® Total Acetabular Cups

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. Prior to use of the system, the surgeon should refer to the product package insert for complete warnings, precautions, indications, contraindications and adverse effects. Package inserts are also available by contacting Wright Medical Technology, Inc.

Design Features



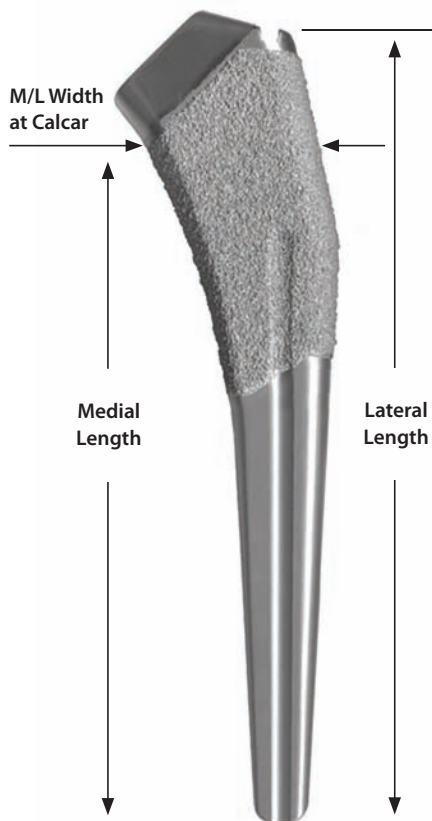
PROFEMUR® TL Stems

General Specifications

- » Titanium Material
- » Stem Length: 130 - 166.5 mm
- » Medial Length: 109 - 145.5 mm
- » A/P Width: 27 - 39.2 mm

Dimensional Chart (mm)

Size	Lateral Length	Medial Length	M/L Width at Calcar
1	130.0	109.0	27.3
2	132.0	111.0	27.9
3	135.0	114.0	29.1
4	137.5	116.5	29.6
5	140.0	119.0	30.4
6	142.8	121.7	31.3
7	146.0	125.0	31.7
8	147.0	126.0	33.0
9	150.0	129.0	34.0
10	155.0	134.0	36.0
11	160.0	139.0	37.8
12	166.5	145.5	39.2



PROFEMUR® Modular Necks

General Specifications

- » Titanium Material
- » Varus Neck Angle: 127°
- » Neutral Neck Angle: 135°
- » Valgus Neck Angle: 143°
- » Neck Length: 27 - 38.5 mm



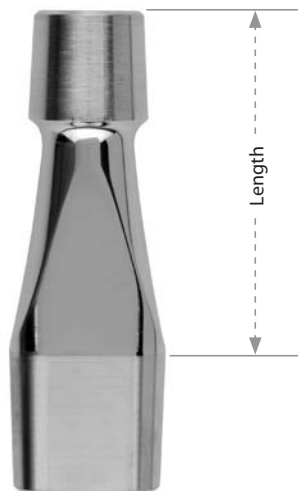
4°/8°/15° Anteversion or Retroversion



6°/8° Varus or Valgus

Dimensional Chart (mm)

Type	Length
Neutral	
Short	28
Long	38.5
Varus/Valgus	
Short	27
Long	38
Ante/Retro 8 Degree	
Short	28
Long	38.5
Ante/Retro 15 Degree	
Short	28
Long	38.5
Ante/Retro - Varus/Valgus 1	
Short	28
Long	38.5
Ante/Retro - Varus/Valgus 2	
Short	28
Long	38.5



Preoperative Planning

Note: Accurate preoperative templating requires good quality standardized radiographs of the pelvis and operative hip.

Determine limb length discrepancy. Draw a line across the bottom of the ischium on the A/P view. The distance from this horizontal reference line to each lesser trochanter should then be measured. The difference between each measured side is the limb length discrepancy. If there is any asymmetry of the pelvis or if landmarks are not clear, other means to determine discrepancy should be used.

Determine the femoral head center. Once the center of rotation for the acetabular component has been determined, the center of rotation for the femoral head should be determined. Superimpose the femoral stem templates sequentially on the A/P x-ray with the templates positioned neutrally along the longitudinal axis of the femur. Estimate the metaphyseal and diaphyseal fit and anticipated level of implant insertion using the templates. The approximate femoral size and length of the femoral neck cut can be estimated from the templates. Neck angle, neck length, and head length which most closely correspond to the patient's femoral head center can be estimated as well. The circles/squares found along the femoral neck axis represent the expected centers of rotation for the femoral head. For the ideal neck/head combination, the circle/square will align atop the previously determined center of rotation for the femoral head. In patients with significant deformity of the femoral head, templating can be performed on the opposite hip if necessary.

Each circle represents the center of rotation for a modular short neck with the corresponding head option (short to long). Each square represents the center of rotation for a modular long neck with the corresponding head option (short to long). The circles/squares on the AP template of the stem illustrate the impact of choosing an 8° varus/valgus neck relative to the neutral neck position | **Figure 1**.

Note: AR/VV necks can also impact neck position by 6° varus/valgus.

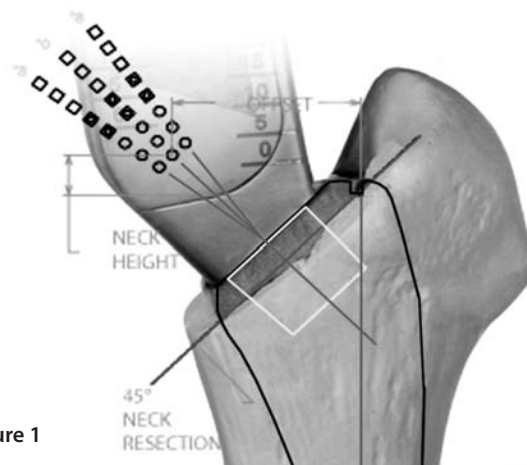


Figure 1

PROFEMUR® TL Total Hip System

As Described By Eric Hume, MD

PROFEMUR® Total Hip System

The lateral x-ray illustrates the front to back fill of the implant and the position of the implant relative to the femoral anterior bow. If the anterior bow is high, the implant size may be reduced to minimize the risk of fracture. The lateral templates use circles/squares to compare the impact of choosing a neutral neck and necks with 8° or 15° of anteversion/retroversion.

Both the A/P and lateral views are needed to illustrate the impact of choosing an AR/VV neck because the combination necks provide multi-dimensional positioning. Each AR/VV neck provides 4° of anteversion/retroversion and 6° of varus/valgus. The impact of each AR/VV option (1 or 2) depends upon which hip is being considered. Therefore, caution should be used to ensure that the appropriate combination is planned.

STEP 1

Femoral Neck Osteotomy.

STEP 2

Open the femoral canal with a box osteotome. The osteotome should be lateralized to ensure a neutral orientation of the implant | **Figure 2.**



Figure 2

STEP 3

Enter the femoral canal with an initial canal finder. The proper depth is equal to the length of the templated stem | **Figure 3.**

PROFEMUR® TL Starter Reamer Chart

Implant Size	Medial Implant Length (mm)
1	109
2	111
3	114
4	117
5	119
6	122
7	125
8	126
9	129
10	134
11	139
12	146



Figure 3

STEP 4

Prepare the femoral canal starting with the size 0 (starter) broach. Stay centered between the anterior and posterior cortices. Insert the broach until it rests 1-2mm below the level of the neck resection.

STEP 5

OPTION 1

Attach the broach handle to the size 0 broach. Using a mallet, with short, controlled strokes begin broaching | **Figure 4**. The S-Scale marks on the broach handle correspond to the centers of rotation for a short neck and the respective femoral head. The L-Scale marks on the broach handle correspond to the centers of rotation for a long neck and the respective femoral head. Sequentially increase broach size.

TIP: During a posterior approach, a guide rod can be used with the broach handle to provide 20° of implant anteversion. Screw the rod into the superior hole at the proximal end of the broach handle. When inserting the broach, rotate the handle until the guide rod is perpendicular to the floor

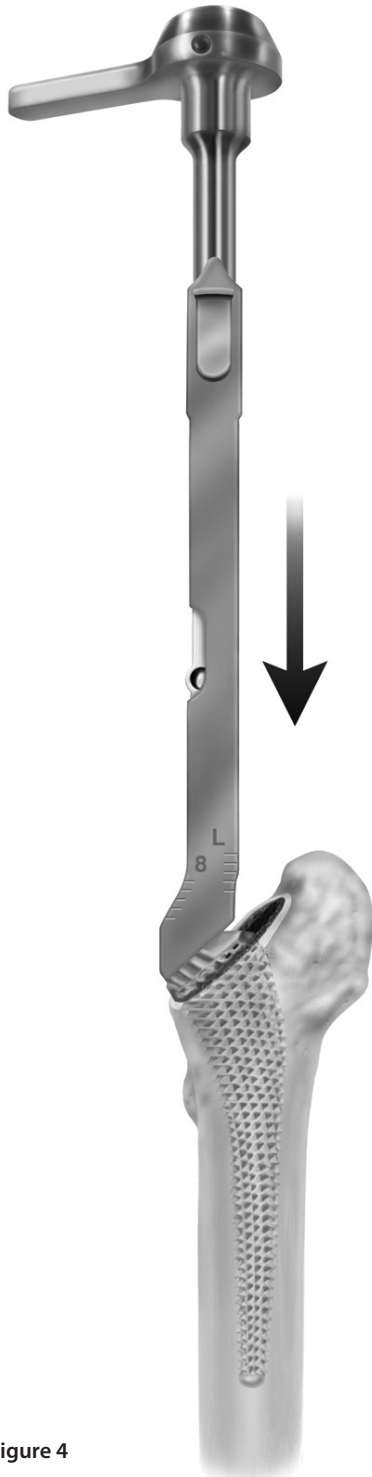


Figure 4

OPTION 2

Attach the size 0 broach and the customized handle to the Woodpecker, a pneumatic broach inserter. Begin broaching and sequentially increase the broach size.

The correct broach depth is achieved when the base of the polished oval collar rests along the resection. Recognize that the polished collar increases in height as stem size increases. Throughout broaching, continue to apply lateral pressure to ensure neutral alignment of the implant. Continue broaching until an optimal fit is found. This will be denoted by a change in tone or resistance as the corners of the broach contact the cortical bone of the femur. To verify a secure fit, attempt to rotate the broach relative to the femur. With proper cortical contact, the broach should not twist or move relative to the femur. At this point, leave the broach fully seated in the canal and detach the broach handle to allow for trial reduction.

POTENTIAL DIFFERENCES BETWEEN BROACHED AND TEMPLATED SIZES:

1. The quality of bone plays an integral role in sizing. For soft bone, the broach may seat further than the template indicates. An implant larger than the templated size may be required. Patients with strong, healthy bone might require an implant smaller than the templated size.
2. If a broach smaller than the size templated becomes tight, hard bone at the lateral femoral neck may be pushing the broach into varus. Use the lateral edge of the broach to restore a neutral position. Additional broaching may be necessary.
3. If a broach is going in straight and still becomes tight with sizes smaller than templated, a repetitive in/out broach motion may clear excess medial and lateral bone. If still tight, the stem should be appropriately downsized until metaphyseal bone is engaged.



Figure 5

STEP 6

Perform a reduction with the trial necks and heads. Once a well-balanced hip has been created with a trial head and neck, remove the broach | **Figure 5.**

***TIP:** The choice of neck anteversion is based on intraoperative assessment of stability. The neck choice that allows maximal flexion/internal rotation and extension/external rotation without dislocation should be chosen.*

STEP 7

Insert the femoral implant into the canal, seating it, as far as possible, by hand and align proper version before placing the slotted Stem Impactor into the slot on the proximal face | **Figure 6.**

Use a mallet and with short, controlled strokes fully seat the implant. Typically, the implant is seated with the base of the polished collar along the neck cut.

***NOTE:** For TL, the implant may sit 1 -2 mm more proud than templated due to the additional 0.5mm thickness per side of the plasma spray. The difference can be addressed during the final trial reduction by selecting the proper head and neck combination.*

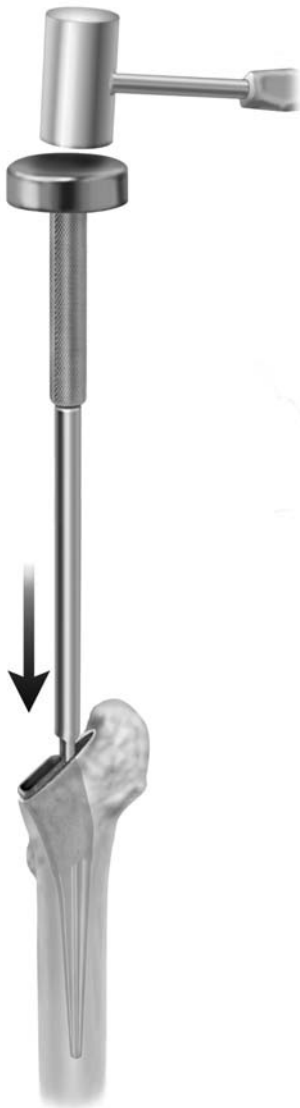


Figure 6

STEP 8

Perform a final trial reduction using the plastic necks and trial heads to reconfirm stability, range of motion and leg length.

STEP 9

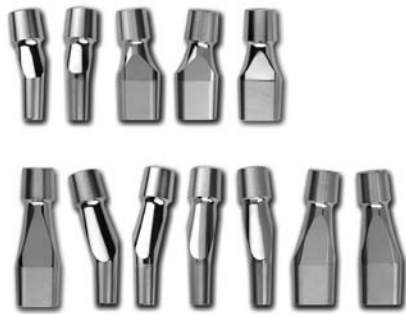
Clean and dry the implant tapers prior to assembly. Suction any fluid from the implant pocket. Insert the appropriate femoral neck implant into the taper. Place a lap sponge over the head taper of the femoral neck. Attach the femoral neck with multiple firm mallet blows. Affix the femoral head by striking the head impactor with several firm mallet blows | **Figures 7 & 8.**



Figure 7

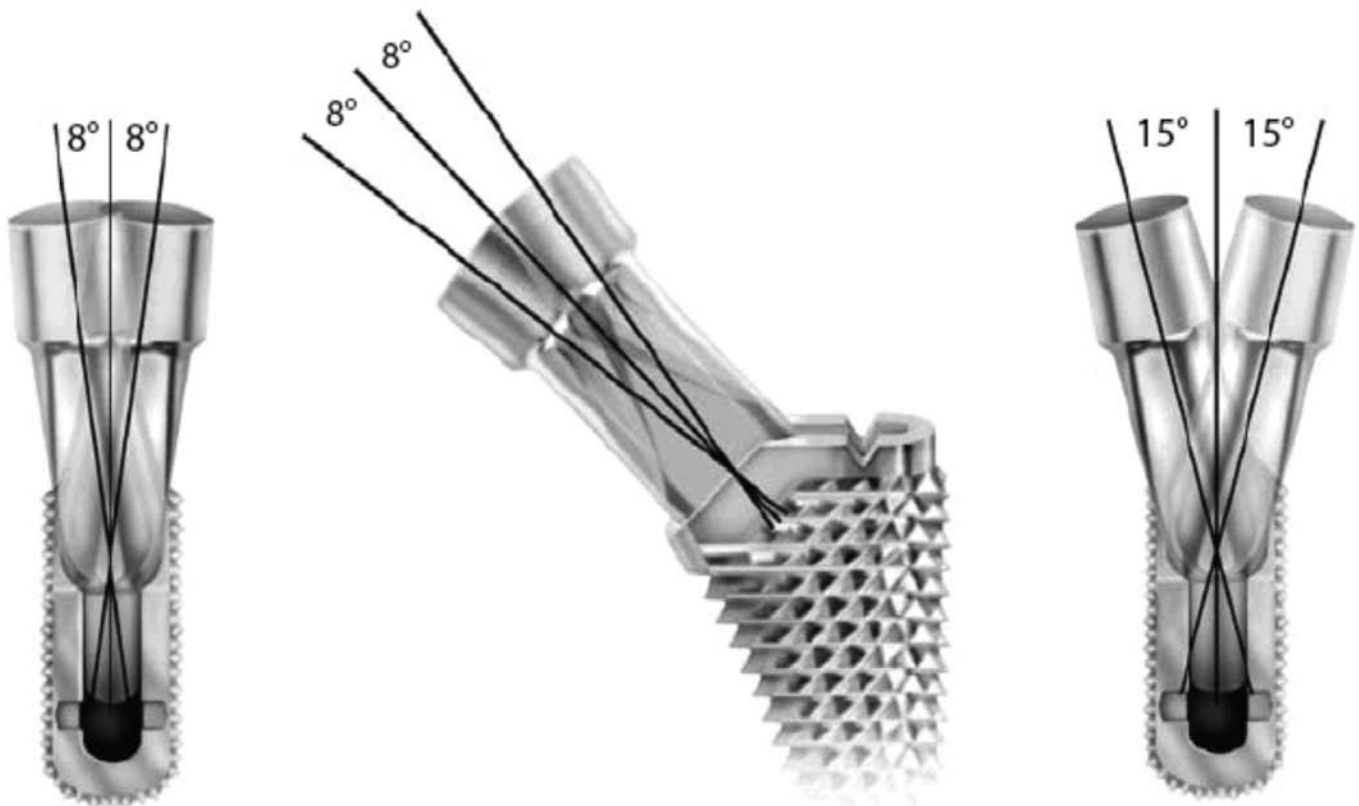


Figure 8



Brief Summary of Neck Options

- » Straight necks create a neutral neck axis. Long necks can often avert the need for a skirted head.
- » Varus necks decrease the inclination angle to 127° (neutral position is 135°); the femoral head shifts medially and inferiorly; leg length is shortened; offset is increased.
- » Valgus necks increase the inclination angle to 143° (neutral position is 135°); the femoral head shifts laterally and superiorly; leg length is increased; offset is decreased.
- » Anteverted necks shift the femoral head anteriorly relative to the stem by 8° or 15°.
- » Retroverted necks shift the femoral head posteriorly relative to the stem by 8° or 15°. Retroverted necks prove useful in hips with excess femoral anteversion such as DDH.
- » AR/W necks combine anteversion/retroversion and varus/valgus necks to offer a broad range of multi-dimensional head positions. Each AR/W neck provides 4° of A/R and 6° of V/V.



Technique Overview

1. Femoral Neck Osteotomy



2. Box Osteotomy



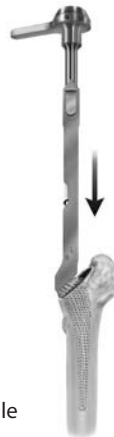
3. Starter Reamer



4. Initial Starter Broach



5. Broach and Broach Handle



6. Trial Reduction



7. Implant Insertion



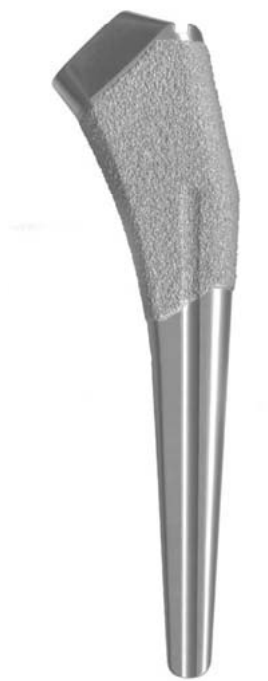
8. Modular Neck Assembly



9. Femoral Head Assembly



Ordering Information



PROFEMUR® TL Stems

PRTL-KITA

Size	Catalog No.
1	PRTL0021
2	PRTL0022
3	PRTL0023
4	PRTL0024
5	PRTL0025
6	PRTL0026
7	PRTL0027
8	PRTL0028
9	PRTL0029
10	PRTL0030
11	PRTL0031
12	PRTL0032



PROFEMUR® Modular Necks

3251-KITN

Modular Neck	Catalog No.
V/V Short	PHA01252
V/V Long	PHA01254
A/R Short 8°	PHA01232
A/R Long 8°	PHA01234
A/R Short 15°	PHA01242
A/R Long 15°	PHA01244
AR/VV 1 Short	PHA01222
AR/VV 1 Long	PHA01224
AR/VV 2 Short	PHA01212
AR/VV 2 Long	PHA01214
Neutral Short	PHA01202
Neutral Long	PHA01204

A-CLASS® Advanced Metal with BFH® Technology Femoral Heads

38AM-KITA



Head OD	Catalog No. Short	Catalog No. Medium	Catalog No. Long
36	38AM-3604	38AM-3600	38AM-3635
38	38AM-3804	38AM-3800	38AM-3835
40	38AM-4004	38AM-4000	38AM-4035
42	38AM-4204	38AM-4200	38AM-4235
44	38AM-4404	38AM-4400	38AM-4435
46	38AM-4604	38AM-4600	38AM-4635
48	38AM-4804	38AM-4800	38AM-4835
50	38AM-5004	38AM-5000	38AM-5035
52	38AM-5204	38AM-5200	38AM-5235
54	38AM-5404	38AM-5400	38AM-5435
56	38AM-5604	38AM-5600	38AM-5635

CONSERVE® Plus Acetabular Cups



Catalog No. HA	Catalog No. Non-HA	Catalog No. Spiked	Cup OD	Cup ID
38HA-3642	3802-3642	38SP-3642	42	36
38HA-3844	3802-3844	38SP-3844	44	38
38HA-4046	3802-4046	38SP-4046	46	40
38HA-4248	3802-4248	38SP-4248	48	42
38HA-4450	3802-4450	38SP-4450	50	44
38HA-4652	3802-4652	38SP-4652	52	46
38HA-4854	3802-4854	38SP-4854	54	48
38HA-5056	3802-5056	38SP-5056	56	50
38HA-5258	3802-5258	38SP-5258	58	52
38HA-5460	3802-5460	38SP-5460	60	54
38HA-5662	3802-5662	38SP-5662	62	56
38HA-5664	3802-5664	38SP-5664	64	56



Wright Medical Technology, Inc.
5677 Airline Road
Arlington, TN 38002
901.867.9971 phone
800.238.7188 toll-free
www.wmt.com

Wright Medical Europe, SA
Rue Pasteur BP 222
83089 Toulon Cedex 09
France
011.33.49.408.7788 phone
www.wmt-emea.com