

hip system solutions

SURGICAL TECHNIQUE

WRIGHT.
TM

PROFEMUR® S
Total Hip System

PROFEMUR® S 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. 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.

PROFEMUR®
total hip SYSTEM

PROFEMUR® S SURGICAL TECHNIQUE

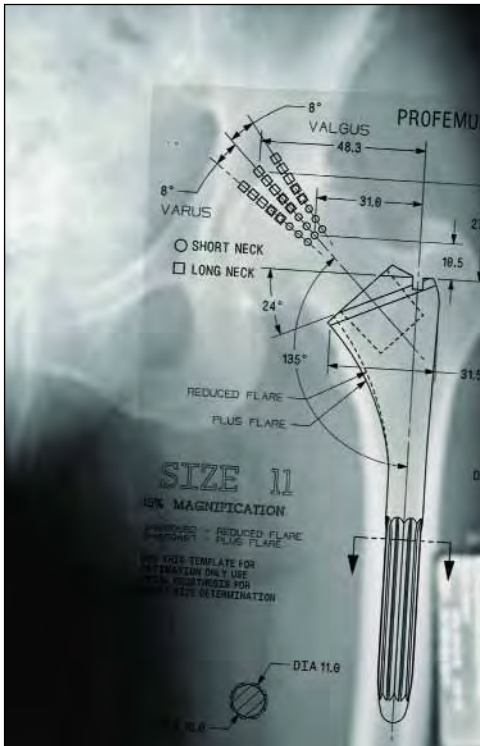


FIGURE 1 |

PREOPERATIVE PLANNING

Draw a line across the pelvis in the A/P view. The distance from the line to each lesser trochanter should then be measured. The difference between each measured side is the leg length discrepancy.

After the acetabulum is templated, mark the center of rotation. Superimpose the femoral stem templates on the A/P x-ray with the templates positioned neutrally along the long axis of the femur. The difference between the acetabular center and the femoral head center can help determine leg length and offset. 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 acetabulum

Each circle represents the center of rotation for a *short* neck with the corresponding head option (-3.5mm to +10.5). Each square represents the center of rotation for a *long* neck with the corresponding head option (-3.5mm to +10.5). 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



FIGURE 2 |

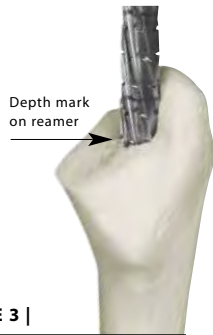


FIGURE 3 |

SURGICAL TECHNIQUE

STEP 1 - NECK RESECTION

Approximately 10-20mm below the greater trochanter, resect the neck at a 66° angle to the longitudinal axis of the femur or using the neck resection guide.

STEP 2 - OPENING THE CANAL

Open the femoral canal with a box osteotome. The osteotome should be lateralized to ensure a neutral varus/valgus orientation of the implant.

| FIGURE 2

STEP 3 - REAMING THE CANAL

Enter the canal with the starter reamer attached to the T-handle. | FIGURE 3
Sequentially ream the canal to the appropriate depth and diameter based on the templated size and TABLE 2.

TABLE 2 |

STEM SIZE	STEM DIAMETER	REAMER SIZE TO ACHIEVE DISTAL SPLINE ENGAGEMENT				STEM LENGTH
		.75 mm PressFit	.5 mm PressFit*	.25 mm PressFit	0 mm PressFit	
11	11mm	9.5mm	10mm	10.5mm	11mm	130
12	12mm	10.5mm	11mm	11.5mm	12mm	135
13	13mm	11.5mm	12mm	12.5mm	13mm	140
14	14mm	12.5mm	13mm	13.5mm	14mm	145
15	15mm	13.5mm	14mm	14.5mm	15mm	150
16	16mm	14.5mm	15mm	15.5mm	16mm	155

* .5 mm PressFit recommended

STEP 4 - BROACHING THE FEMUR

TIP | A guide rod can be used with the broach handle to approximate 20° of anteversion.

Sequentially broach up to the appropriate size, using the reduced flare broaches. Using a mallet with short, controlled strokes begin broaching. The correct broach depth is achieved when two rows of teeth are proximal to the neck resection.

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 center of rotation for a long neck and the respective femoral head. | FIGURE 4

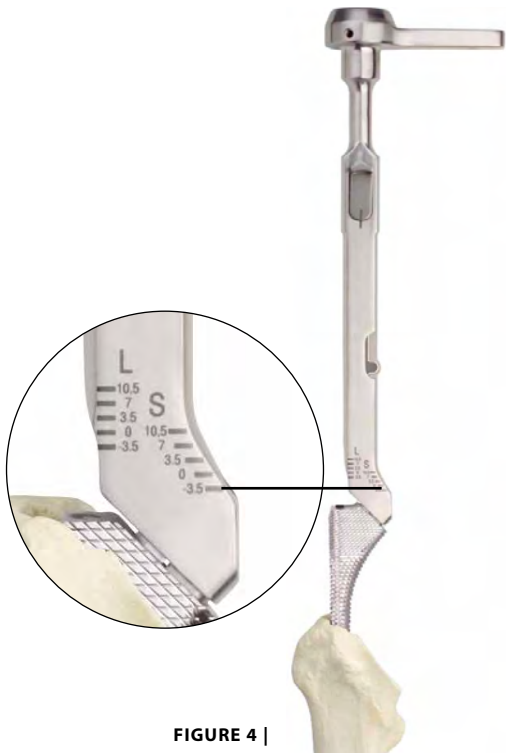


FIGURE 4 |



FIGURE 5 |

Continue broaching until an optimal fit is found. This will be denoted by a change in tone or resistance. 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. Also, if sufficient metaphyseal bone is present, the plus flare can be utilized.

If optimal fit is not achieved, reaming and broaching to the next larger size may be appropriate. Repeat until optimal fit is found. At this point, leave the broach fully seated in the canal and detach the broach handle to allow for trial reduction.

STEP 5

Perform a reduction with the trial necks and heads. While reducing the joint, refer to the chart on page nine that lists the potential leg length/offset options. Once a well-balanced hip has been created with a trial head and neck, remove the broach. | **FIGURE 5**

SHORT NECKS



LONG NECKS



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; limb 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; limb 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 CDH.
- AR/VV necks combine anteversion/retroversion and varus/valgus necks to offer a broad range of multi-dimensional head positions. Each AR/VV neck provides 4° of A/R and 6° of V/V.

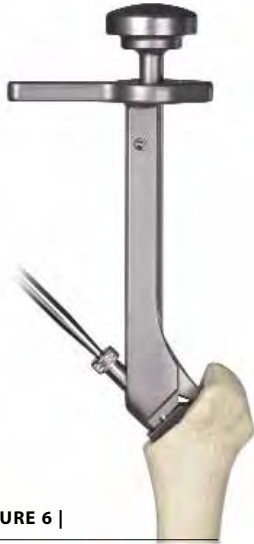


FIGURE 6 |

STEP 6

Femoral component can be fully seated with either stem impactor.

| FIGURES 6 AND 7

Use a mallet with short, controlled strokes to seat the implant. Typically, the final implant is seated with the proximal edge of the plasma spray is even with the neck cut.

NOTE | The implant may sit 1 -2 mm more proud than templated due to the additional 0.25mm 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 7 |

STEP 7

Perform a final trial reduction using the plastic necks and trial heads to reproduce limb length, offset, and impingement-free range of motion.

CAUTION | DO NOT USE METAL TRIAL NECKS WITH THE IMPLANT! METAL TRIAL NECKS ARE ONLY TO BE USED WITH BROACHES SINCE THEY MAY DAMAGE THE NECK TAPER. ONLY PLASTIC TRIAL NECKS SHOULD BE USED FOR TRIAL REDUCTIONS WITH THE IMPLANT.



FIGURE 8 |

STEP 8

Clean and dry implant tapers prior to assembly. Insert the appropriate femoral neck implant into the taper. Place a lap sponge over the head taper of the femoral neck and impact with multiple firm mallet blows. | **FIGURE 8** Affix the femoral head by striking the head impactor with several firm mallet blows. | **FIGURE 9**



FIGURE 9 |



FIGURE 9 |



FIGURE 10 |



FIGURE 11 |



FIGURE 12 |



FIGURE 13 |

BROACH HANDLE CLEANING

DISASSEMBLY

Place the hex screwdriver into the allen screw into the recessed hole in the top of the broach handle. While applying downward pressure, turn the screw counterclockwise 1/4 of a turn. | FIGURE 9 Remove the spring assembly.

| FIGURE 10 Push the button on the slide mechanism and pull the slide out with the plunger. | FIGURES 11 AND 12 Remove the trigger by pulling the larger trigger out of the hole. | FIGURE 13

ASSEMBLY

Slide the sliding mechanism into the plunger. | FIGURE 14 Put the trigger into the hole leading with the smaller side. | FIGURE 15 Insert the plunger into the hole while placing the slide mechanism into the slot. Push the button on the slide to fully seat it. | FIGURE 16 Insert the spring assembly into the recessed hole while aligning the slots with the pins. | FIGURE 17 Using a hex screwdriver, push down on the screw and turn clockwise 1/4 of a turn.

| FIGURE 18



FIGURE 14 |



FIGURE 15 |



FIGURE 16 |

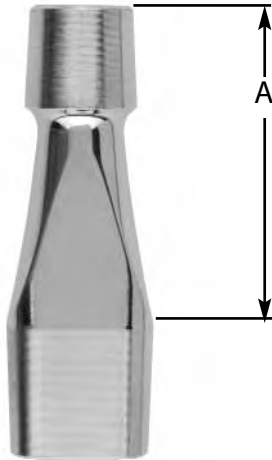


FIGURE 17 |



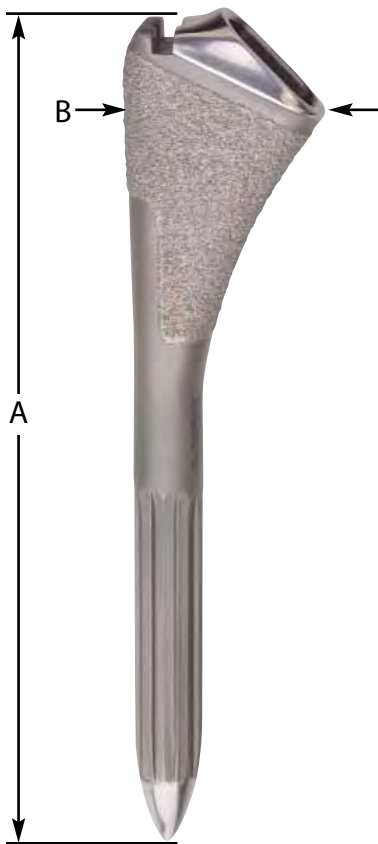
FIGURE 18 |

APPENDIX A | REFERENCE CHARTS



DIMENSIONAL CHART | FEMORAL NECKS (mm) 3251-KIT N

TYPE	A	CATALOG #
Neutral		
Short	28	PHA01202
Long	38.5	PHA01204
Varus/Valgus 8°		
Short	27	PHA01252
Long	38	PHA01254
Ante/Retro 8°		
Short	28	PHA01232
Long	38.5	PHA01234
Ante/Retro 15°		
Short	28	PHA01242
Long	38.5	PHA01244
Ante/Retro 6° - Varus/Valgus 1		
Short	28	PHA01222
Long	38.5	PHA01224
Ante/Retro 6° - Varus/Valgus 2		
Short	28	PHA01212
Long	38.5	PHA01214



DIMENSIONAL CHART | PROFEMUR® S STEMS (mm)

ALPHA CATALOG #	SIZE	A STEM LENGTH	B M/L WIDTH	FLARE
94009582	11	130	29	REDUCED
94009467	11	130	31.5	PLUS
94008340	12	135	29.5	REDUCED
94008341	12	135	32	PLUS
94008342	13	140	31.5	REDUCED
94008343	13	140	33.5	PLUS
94008344	14	145	32	REDUCED
94008345	14	145	35	PLUS
94008346	15	150	33	REDUCED
94008347	15	150	36	PLUS
94008348	16	155	34	REDUCED
94008349	16	155	37	PLUS
N/A	17	160	35	REDUCED
N/A	17	160	38	PLUS
N/A	18	165	38.5	PLUS

APPENDIX B | REFERENCE CHARTS



LINEAGE® Acetabular Cup System

SHELL SIZE	GROUPING	CERAMIC LINER INSIDE DIAMETER	METAL LINER INSIDE DIAMETER	POLYETHYLENE LINER INSIDE DIAMETER
46mm 48mm 50mm	Group 1	28mm	28mm	28mm
52mm 54mm 56mm	Group 2	32mm	32mm	28 & 32mm
58mm 60mm 62mm	Group 3	32mm	32mm	28 & 32mm
64mm 66mm 68mm	Group 4	36mm	36mm	28 & 32mm



CONSERVE® Total Head with BFH™ Technology

HEAD SIZE	CUP SIZE
36 O.D.	42 O.D.
38 O.D.	44 O.D.
40 O.D.	46 O.D.
42 O.D.	48 O.D.
44 O.D.	50 O.D.
46 O.D.	52 O.D.
48 O.D.	54 O.D.
50 O.D.	56 O.D.
52 O.D.	58 O.D.
54 O.D.	60 O.D.
56 O.D.	62 O.D.
56 O.D.	64 O.D.

APPENDIX C | ORDERING INFORMATION

CATALOG #	DESCRIPTION	FULL LAUNCH CATALOG #	DESCRIPTION	ALPHA CATALOG #
PROFEMUR® S HIP SYSTEM				
WRIGHT EXPRESS® INSTRUMENT KIT 5251-KT 10				
94009476	BROACH SIZE 11 REDUCED FLARE	PHA00211	SIZE 11 REDUCED	94009582
94009477	BROACH SIZE 11 PLUS FLARE	PHA00311	SIZE 11 PLUS	94009467
94009531	BROACH SIZE 12 REDUCED FLARE	PHA00212	SIZE 12 REDUCED	94008340
94009532	BROACH SIZE 12 PLUS FLARE	PHA00312	SIZE 12 PLUS	94008341
94009478	BROACH SIZE 13 REDUCED FLARE	PHA00213	SIZE 13 REDUCED	94008342
94009479	BROACH SIZE 13 PLUS FLARE	PHA00313	SIZE 13 PLUS	94008343
94009480	BROACH SIZE 14 REDUCED FLARE	PHA00214	SIZE 14 REDUCED	94008344
94009481	BROACH SIZE 14 PLUS FLARE	PHA00314	SIZE 14 PLUS	94008345
94009482	BROACH SIZE 15 REDUCED FLARE	PHA00215	SIZE 15 REDUCED	94008346
94009483	BROACH SIZE 15 PLUS FLARE	PHA00315	SIZE 15 PLUS	94008347
94009530	BROACH SIZE 16 REDUCED FLARE	PHA00216	SIZE 16 REDUCED	94008348
94009484	BROACH SIZE 16 PLUS FLARE	PHA00316	SIZE 16 PLUS	94008349
47990092	BROACH TRAY			
WRIGHT EXPRESS® INSTRUMENT KIT 5251-KT 20				
APA02121	FEMORAL HEAD TRIAL 28MM SHORT -3.5MM	PHA01252	V V SHORT 8°	
APA02122	FEMORAL HEAD TRIAL 28MM MEDIUM +0	PHA01254	V V LONG 8°	
APA02123	FEMORAL HEAD TRIAL 28MM LONG +3.5MM	PHA01242	AR SHORT 15°	
APA02124	FEMORAL HEAD TRIAL 28MM EXTRA LONG +7MM	PHA01244	AR LONG 15°	
APA02125	FEMORAL HEAD TRIAL 28MM XX-LONG +10.5MM	PHA01232	AR SHORT 8°	
		PHA01234	AR LONG 8°	
APA02151	FEMORAL HEAD TRIAL 32MM SHORT -3.5MM	PHA01212	AR/V V2 SHORT	
APA02152	FEMORAL HEAD TRIAL 32MM MEDIUM +0	PHA01214	AR/V V2 LONG	
APA02153	FEMORAL HEAD TRIAL 32MM LONG +3.5MM	PHA01222	AR/V V1 SHORT	
APA02154	FEMORAL HEAD TRIAL 32MM X-LONG +7MM	PHA01224	AR/V V1 LONG	
		PHA01202	NEUTRAL SHORT	
		PHA01204	NEUTRAL LONG	
APA02142	FEMORAL HEAD TRIAL 36MM SHORT -3.5MM			
APA02144	FEMORAL HEAD TRIAL 36MM MEDIUM +0			
APA02146	FEMORAL HEAD TRIAL 36MM LONG +3.5MM			
APA02148	FEMORAL HEAD TRIAL 36MM X-LONG +7MM			
APA08102	PLASTIC TRIAL NECK SHORT STRAIGHT			
APA08104	PLASTIC TRIAL NECK LONG STRAIGHT			
APA08112	PLASTIC TRIAL NECK A/R VAR/VAL 1 SHORT			
APA08114	PLASTIC TRIAL NECK A/R VAR/VAL 1 LONG			
APA08122	PLASTIC TRIAL NECK A/R VAR/VAL 2 SHORT			
APA08124	PLASTIC TRIAL NECK A/R VAR/VAL 2 LONG			
APA08132	PLASTIC TRIAL NECK 8 DEG A/R SHORT			
APA08134	PLASTIC TRIAL NECK 8 DEG A/R LONG			
APA08142	PLASTIC TRIAL NECK 15 DEG A/R SHORT			
APA08144	PLASTIC TRIAL NECK 15 DEG A/R LONG			
APA08152	PLASTIC TRIAL NECK VAR/VAL SHORT			
APA08154	PLASTIC TRIAL NECK VAR/VAL LONG			
4700MC0200	BOX CHISEL			
4400F10000	HEAD IMPACTOR			
APA04241	STRAIGHT RASP HANDLE (2)			
4400FH100	T-HANDLE			
APA04244	BROACH HANDLE REFERENCE ROD (2)			
94009488	STEM IMPACTOR			
APA00001	HEAD & NECK EXTRACTOR			
APA00005	HEAD & NECK EXTRACTOR SPANNER			
APA00006	HEAD & NECK EXTRACTOR TOMMY BAR			
APA00003	HEAD & NECK EXTRACTOR NECK ATTACHMENT			
PPG30170	BROACH EXTRACTION RING			
WRIGHT EXPRESS® INSTRUMENT KIT 4799-KIT 3				
EXTEND® FEMORAL REAMER KIT SIZES 9-18MM				
PROFEMUR® S IMPLANT				
PROFEMUR® MODULAR NECK IMPLANT KIT 3251-KIT N				
WOODPECKER BROACHING SYSTEM				
WRIGHT EXPRESS® INSTRUMENT KIT 4251 - KT 10				
APA00930	WOODPECKER			
APA00931	HOSE ATTACHMENT			
APA00941	CASE			
PPA30091	BROACH HANDLE			



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