TOTAL JOINT ORTHOPEDICS

KLASSIC® REVISION KNEE SYSTEM

REVISION TKA | 3 TRAYS

CR to Constrained, Augments, Cemented Stems, and Universal® Cones for Femoral and Tibial use

Klassic® Stem Extension | Cemented
Diameters: 12, 14mm
Lengths: 50*, 70, 120mm
**14mm diameter only*

Klassic® Femur | PS-Post®
Sizes 1-7

Klassic® Stem Adapter | Femoral

Klassic® Femoral Augment | Distal & Posterior
Sizes: 1-2, 3-4, 5-7
Thicknesses: 5, 10mm

Universal® Cone
Sizes 1-7

Klassic® Tibial Insert PS-Post® & PS-Max®
Sizes 1-6;
Thicknesses: 10-24mm*
**See page 4*

Klassic® Tibial Baseplate | Revision
Sizes 1-6

Klassic® Tibial Augment
Sizes: 1-2, 3-4, 5-6
Thicknesses: 5, 10mm

Klassic® Stem Extension | Cemented
Diameters: 12, 14mm
Lengths: 50*, 70, 120mm
**14mm diameter only*

KLASSIC® REVISION KNEE SYSTEM | FEMORAL CONSTRUCT

STEM EXTENSION | CEMENTED

Diameters: 12, 14mm; Lengths: 50*, 70, 120mm **14mm diameter only*

- Marked lengths are actual lengths and exclude boss and/or Stem Adapter
- Titanium; for cemented use

STEM ADAPTER | FEMORAL

Diameter: 19mm; Length: 30mm

- Allows for left or right orientation of 5° valgus
- Titanium; for cemented use

FEMUR | REVISION

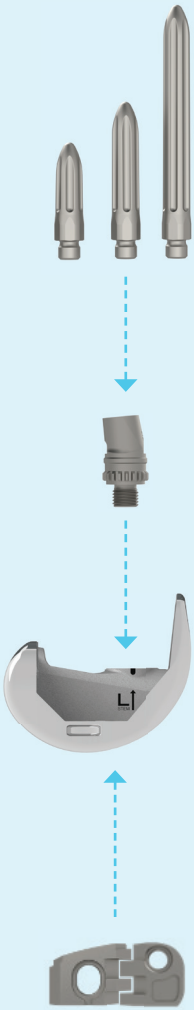
Sizes: 1-7

- Boss Height: 20mm
- 1mm cement pockets for bone cement which aids in pressurization and bonding
- 9° double Q-Angle to smoothly guide patella from left or right
- Posterior referenced
- Screw attachment for Modular Pegs or Femoral Augments

AUGMENTS | FEMORAL | DISTAL & POSTERIOR

Sizes: 1-2, 3-4, 5-7;
Thicknesses: 5, 10mm

- Compatible in medial and lateral positions
- Distal and Posterior-specific Screws



Scan for Cemented Stem Workflow Video

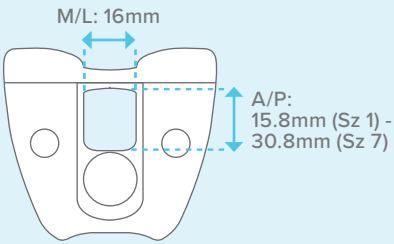
KLASSIC® FEMUR | REVISION

Sizes: 1-7

- +1/-1 size compatibility with tibia
- 4mm step in M/L width between sizes
- 3.5mm step in A/P length between sizes
- Distal and posterior condyles are 10mm thick
- 6° anterior flange
- Femoral Cut Block is 3mm wider than final implant
- Peg positions, posterior cut and posterior chamfer remain the same for all sizes, as this is a posterior referenced system

FLEXION BALANCING WITH FEMUR SIZE

- *Increasing the femur size can tighten knee in flexion*
- *Stem position is fixed*



Open top IC Box provides access to femoral canal after implantation

REVISION SYSTEM SPECIFICATIONS	
Dimension	**Value**
Box Width (Reamer Prep)	19mm (20mm Reamer with cement clearance)
Max Hyper Extension	5° (size 1 worst case) 8° size 4
Max Flexion	135°
Post Engagement Point	85-90°
Jump Height	PS-Post®: minimum 14mm PS-Max®: minimum 21mm

KLASSIC® FEMUR	REVISION	
Size	**A/P (mm)**	**M/L (mm)**
1	54	59
2	57.5	63
3	61	67
4	64.5	71
5	68	75
6	71.5	79
7	75	83

Femoral pegs are uniform in distance between sizes. Selecting an alternate femur after drilling the peg holes does not require drilling additional holes.

KLASSIC® REVISION KNEE SYSTEM | TIBIAL CONSTRUCT

TIBIAL INSERT | PS-POST®

Sizes: 1-6; Thicknesses: 10, 11, 12, 14, 16, 18mm

TIBIAL INSERT | PS-MAX®

Sizes: 1-6; Thicknesses: 10, 12, 14, 16, 18, 21, 24mm

TIBIAL BASEPLATES | PRIMARY & REVISION

Sizes: 1-6

- Revision: +2mm thicker, 0° keel

TIBIAL AUGMENTS

Sizes: 1-2, 3-4, 5-6;
Thicknesses: 5, 10mm

- 10mm has slight taper (1 size smaller)
- Threaded to the Klassic® Revision Tibial Baseplate
- Same Screw as Posterior Femoral Augment included
- Cemented directly to Klassic® Tibial Baseplate; discard Screw for use with Klassic® Tibial Baseplate

STEM EXTENSIONS | TIBIAL

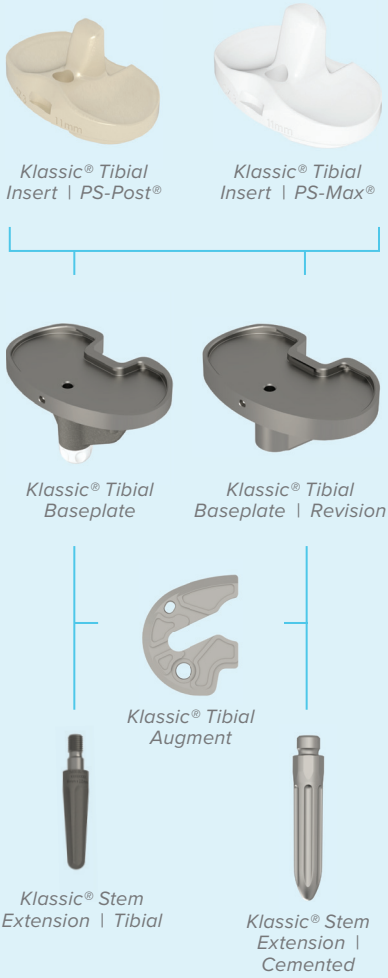
Lengths: 25, 50, 100, 150mm

- Add 25mm for the length of the Baseplate to achieve total length of assembly
- *Note: Dome Extension length is 10mm, and is not compatible with the Revision Baseplate*

STEM EXTENSIONS | CEMENTED

Diameters: 12, 14mm; Lengths: 50*, 70, 120mm **14mm diameter only*

- Marked lengths are actual lengths and exclude boss and/or Stem Adapter



KLASSIC® REVISION KNEE SYSTEM | TIBIAL INSERTS

PS-POST® INSERT

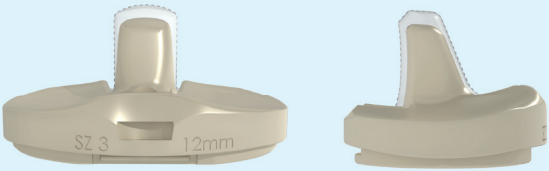
Sizes: 1-6; Thicknesses: 10, 11, 12, 14, 16, 18, 21mm

- Reduced anterior profile to provide patellar clearance
- Congruent dish for mid-stability
- Posterior relief for maximum flexion
- E-Link® Poly provides excellent articular wear resistance with appropriate toughness to support the high loads transmitted through the post and cam.

PS-MAX® INSERT

Sizes: 1-6; Thicknesses: 10, 12, 14, 16, 18, 21, 24mm

- Constrained insert (not mid-level constraint, not PS-Plus)
- Virgin polyethylene has the highest toughness and durability compared to poly that undergoes radiation crosslinking, making it a better material for the demands of a maximally stabilized implant.



Overlay comparison of Klassic® PS-Post® and PS-Max® Inserts

KLASSIC® TIBIAL INSERTS | SPECIFICATIONS		
Specifications	PS-Post® Insert	PS-Max® Insert
Varus/valgus Constraint	n/a	+/- 1.6°
Internal/external Rotation	+/- 10°	+/- 7°
Post Engages	85-90°	55-77°
Post Jump Height	14mm	21mm
Anterior/posterior Buildup	9mm/1.5mm	
Femoral Compatibility	+1/-1 size	
Femoral Box Prep	Ream-only	
Locking Mechanism	Anterior snap with posterior feet, M/L constraint, and a set screw* to minimize micro motion. Anti-backout feature to ensure retention of the screw.	
Material	E-Link® Poly only	Std. Poly only
		

KLASSIC® REVISION KNEE SYSTEM | TIBIAL INSERTS

COMPETITIVE INSERTS					
Company	Constrained Insert	ROM	Constraint (+/-)		Post Height (mm)
			I/E	V/V	
TJO	Klassic® PS-Post®	-5° to 135°	10°	n/a	22
	Klassic® PS-Max®	-5° to 135°	7°	1.6°	25
Zimmer	LCCK		2°	1.25°	25-28
	Persona CPS		5.5°	1.5°	
Biomet	Vanguard PSC	-5°	0.5°	1°	
	PS+		2°	2°	20
Stryker	Triathlon TS		7°	2°	25
DePuy	Attune Revision	-12°	4°	1.25°	
	Sigma TC3		4.3°	2.2°	23
Smith & Nephew	Legion Revision	-10°	3°	2°	

KLASSIC® REVISION KNEE SYSTEM | TIBIAL BASEPLATES

TIBIAL BASEPLATE

Sizes: 1-6

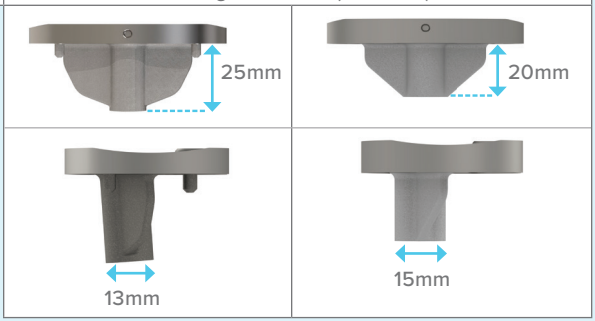
- Anatomically optimized to cover tibial plateau
- Modular to allow for varied Cemented Stem lengths
- Smooth finished tray to minimize backside wear

TIBIAL BASEPLATE | REVISION

Sizes: 1-6

- +2mm thicker to accommodate bone loss
- 0° keel facilitates neutral tibial resection
- Threaded Augment attachments and no peripheral pegs

KLASSIC® TIBIAL BASEPLATES | SPECIFICATIONS		
Specifications	Tibial Baseplate	Tibial Baseplate | Revision
Keel Angle	4°	0°
Tibial Tray Thickness	3.5mm	5.5mm (+2mm)
Augment Attachment	Cemented	Screw
Stem Compatibility	Tibial Stem Extension	Cemented Stem
Peripheral Pegs	4	None
Material	Wrought Ti6Al4V (Titanium)	



KLASSIC® TIBIAL BASEPLATE SIZING					
Size	Dimensions (mm)			Tibial Baseplate Length (mm)	
	A/P	M/L	Keel Width	Primary*	Revision
1	41	63	40	25	20
2	43	67	40	25	20
3	45	71	46	25	20
4	47	75	46	25	20
5	49	79	52	25	20
6	51	83	52	25	20

**Primary Tibial Baseplate length does not include the 10mm Dome Extension*

KLASSIC® REVISION KNEE SYSTEM | TIBIAL BASEPLATES

COMPETITIVE BASEPLATES					
Company	Product	Material	Finish	Stemmable	Locking Mechanism
TJO	Primary	Titanium	Smooth, Gritblast	Yes	Screw
	Revision				
DePuy	Attune S+	CoCr	Smooth, Light Gritblast	Not in Primary	Dovetail & Snap
	Attune Revision			Yes	
Smith & Nephew	Journey II/ Genesis II	Titanium	Smooth, Gritblast	Yes	Dovetail & Snap
Stryker	Triathlon	CoCr	Gritblast	Not in Primary	Locking wire
Zimmer Biomet	Persona	Titanium	Smooth, Gritblast	Yes	Dovetail & Screw
	Vanguard				

KLASSIC® REVISION KNEE SYSTEM | STEM EXTENSIONS

STEM EXTENSION | TIBIAL
Lengths: 25, 50, 100, 150mm
- Taper 13-9mm

STEM EXTENSION | CEMENTED
Diameters: 12, 14mm; Lengths: 50*, 70, 120mm **14mm diameter only*

KLASSIC® STEM EXTENSIONS | SPECIFICATIONS		
Specifications	Stem Extension | Tibial	Stem Extension | Cemented
Taper	13-9mm	None
Compatibility	Primary Tibial Baseplate (Cemented & Porous)	Revision Tibial Baseplate, PS Femur when used with Femoral Stem Adapter
Torque	Hand-tightened	Hand-tightened (use Torque Handle for Femoral Adapter)
Material	Titanium	
Indication	For cemented or cementless use	For cemented use only
		

	KLASSIC® STEMS & UNIVERSAL® CONE | REAMING DEPTH			
	Tibia*		Femur	
Stem Length (mm)	Ream Depth (mm)	Reamer Marking	Ream Depth (mm)	Reamer Marking
50	75	T50	100	F50/T70
70	100	F50/T70	125	F70
120	150	T120	175	F120
Universal® Cone	175	F120	225	

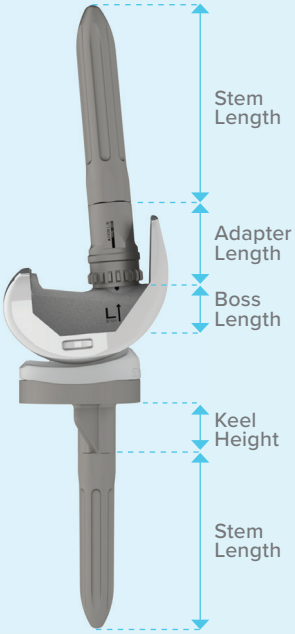
IM Reamer | Revision (2026.XX.000)

IM Reamer (2014.XX.000)

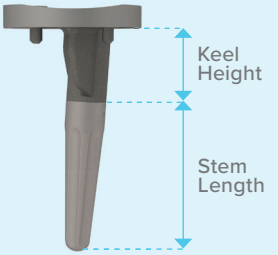
2014.XX.000 Reamers only have labeled depths for 120 and 70mm Femoral Stems. Ream to the 120 line for tibial cone use and the third mark for femoral cone use.

REVISION FEMUR + STEM DIMENSIONS			
Stem Length (mm)	Boss Length (mm)	Adapter Length (mm)	Total Construct (mm)
50	20	30	**100**
70	20	30	**120**
120	20	30	**170**

REVISION TIBIAL BASEPLATE + STEM DIMENSIONS		
Stem Length (mm)	Keel Height (mm)	Total Construct (mm)
50	20	**70**
70	20	**90**
120	20	**140**



PRIMARY TIBIAL BASEPLATE + STEM DIMENSIONS		
Stem Length (mm)	Keel Height (mm)	Total Construct (mm)
25	24	**49**
50	24	**74**
100	24	**124**
150	24	**174**

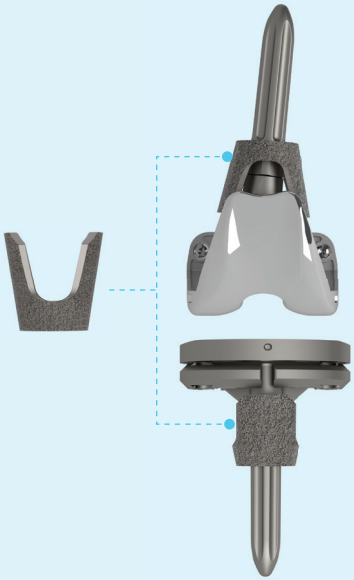


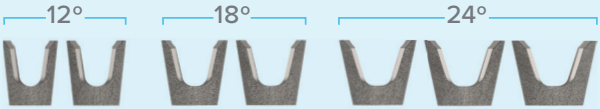
UNIVERSAL® CONE SYSTEM | OVERVIEW

UNIVERSAL® CONE

Sizes: 1-7

- Compatible with femur and tibia
- Deep cutout for flexible implant positioning & broad compatibility
- Anatomic/bone-conserving taper
- Ream-only preparation (3 angled Reamers)
- All sizes accommodate a 16mm Stem
- Proven cementless fixation
- Narrower options for femur and small tibial defects





UNIVERSAL® CONE SIZING				
Size	Taper Angle (°)	Height (mm)	Defect Diameter (mm)	Max Stem Diameter (mm)
1	12	32.5	28	16
2	12	32.5	30	18
3	18	32.5	33	18
4	18	32.5	35	20
5	24	32.5	39	20
6	24	32.5	41	22
7	24	32.5	43	24

UNIVERSAL® CONE | FEMORAL COMPATIBILITY

Klassic® PS-Post® Femur Size	Universal® Cone Size						
	1	2	3	4	5	6	7
1	✓	✓	✓	✓			
2	✓	✓	✓	✓	✓		
3	✓	✓	✓	✓	✓	✓	
4	✓	✓	✓	✓	✓	✓	✓
5	✓	✓	✓	✓	✓	✓	✓
6	✓	✓	✓	✓	✓	✓	✓
7	✓	✓	✓	✓	✓	✓	✓

COMPETITIVE CONE SPECIFICATIONS

TJO				LEGION								TRIATHLON			
Tibia/Femur				Tibia				Femur				Tibia			
Size	A/P (mm)	Max Stem	Height (mm)	Size	A/P (mm)	Max Stem	Height (mm)	Size	A/P (mm)	Max Stem	Height (mm)	Size	A/P (mm)	Max Stem	Height (mm)
								18	25.6	18	30				
1	28	16	32.5					20	28.4	20	32.5				
2	30	18	32.5	18	30.8	18	25, 40	22	31.4	22	35				
3	33	18	32.5	20	32.8	20	25, 40	24	34.4	24	35	A	33	17	30
4	35	20	32.5	22	34.8	22	25, 40	26	34.4	26	35	B	35	19	30
5	39	20	32.5	24	36.8	24	25, 40	28	34.3	28	35	C	37	21	30
6	41	22	32.5	26	38.8	26	25, 40	30	34.2	30	35	D	39	21	35
7	43	24	32.5	28	40.8	28	25, 40					E	41	21	40
				30	42.8	30	25, 40								

KLASSIC® REVISION KNEE SYSTEM | SURGICAL PEARLS

TIBIA

- *Posterior slope should be 0-3° to prevent anterior impingement*

TIBIAL INSERT SET SCREW

- *Insert the Tibial Insert Set Screw into the hole in the Tibial Insert and tighten it with a 3.5mm Screwdriver*
- *The anti-backout feature of the Tibial Insert will provide some resistance while tightening the Screw; completely bottom out the Screw with the Baseplate to ensure that it is tightened appropriately*

Proper insertion of the Tibial Insert Set Screw

- *To disengage the locking mechanism on the Tibial Insert, remove the Set Screw using the 3.5mm Hex Screwdriver (standard large frag) and place a .50in osteotome in the anterior aspect of the polyethylene (after the bone cement has cured) and lift upward on the polyethylene to release the Baseplate locking mechanism without damaging the Baseplate itself*

PATELLA

- *For optimal patellar tracking, avoid any lateral placement of the patella*
- *Ensure power handpiece is set to ream before planing*
- *Removing excess lateral facet after implantation may reduce chance of impingement with femur*

FEMORAL IMPLANT ASSEMBLY

- *After the femoral construct has been assembled on the cradle, remove it and perform a final tightening of the Cemented Stem. Ensure the "L/R" hash are aligned to verify proper assembly*

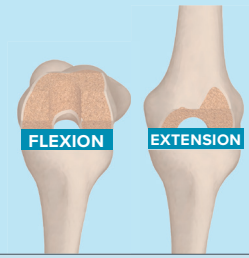
CONES

- *If preparing for a Universal® Cone, removing cement facilitates the reaming process*
- *Place the Universal® Cone slightly distal to the proximal cut of the tibia (countersink) to fit a saw blade or osteotome between the top of the Cone and the bottom of the Tibial Baseplate in the event of future revision surgeries*

KLASSIC® REVISION KNEE SYSTEM | GAP BALANCING

EXTENSION GAP

FLEXION GAP

	LOOSE	BALANCED	TIGHT
LOOSE	**CAUSES** 1. Over-resection of tibia or tibial sided bone defect 2. Femoral joint line elevation and loss of posterior condylar offset **POSSIBLE SOLUTION(S)** 1. Increase tibial poly thickness *-or-* Add symmetric tibial sided augments to restore bone loss and use midrange poly thickness to balance 2. Restore femoral joint line by using distal femoral augments *-and-* Increase posterior condylar offset by posteriorly shifting the femur and/or up-sizing the femoral component and adding posterior femoral augments	**CAUSES** 1. Loss of posterior condylar offset 2. Excessive tibial slope **POSSIBLE SOLUTION(S)** 1. Increase posterior condylar offset by posteriorly shifting the femur and/or up-sizing the femoral component and adding posterior femoral augments *-or-* Resect additional distal femur to make extension looser to match the flexion gap (rare solution - recheck the offset first). 2. Aim for a more neutral tibial slope (0-3°)	**CAUSES** 1. Femur is distalized, with a lack of posterior condylar offset 2. Excessive tibial sided thickness attempting to inadequately fill a loose flexion gap and overly tighten the extension gap, with femur having appropriate distal resection **POSSIBLE SOLUTION(S)** 1. Proximalize femur by re-cutting distal femur *-and-* Increase posterior condylar offset by posteriorly shifting the femur and/or up-sizing the femoral component and adding posterior femoral augments 2. Assess for excess tibial thickness. If present, decrease tibial thickness, maintain the distal femur position *-and-* Increase posterior condylar offset by posteriorly shifting the femur and/or up-sizing the femoral component and adding posterior femoral augments
BALANCED	**CAUSES** 1. Over-resection of distal femur 2. Overly increased posterior condylar offset/oversized femoral component and excessive posterior femoral positioning, leading to the flexion space feeling balanced before the extension space has been balanced by the appropriate tibial thickness **POSSIBLE SOLUTION(S)** 1. Add distal femoral augments to distalize the femur 2. Anteriorly shift the femur or down-size the femoral component and decrease posterior augments, then increase tibial thickness to fill the now looser flexion space and loose extension space simultaneously	**DESIRED GAP BALANCE**  	**CAUSES** 1. Excessive distal femoral augment or distalized femoral position 2. Excessive tibial sided thickness filling a loose flexion gap to make it feel balanced and overly tightening the extension gap with the femur having appropriate distal resection **POSSIBLE SOLUTION(S)** 1. Remove distal femoral augments or resect additional distal femur 2. Decrease the tibial thickness, and maintain the distal femoral joint line *-and-* Increase posterior condylar offset by posteriorly shifting the femur and/or up-sizing the femoral component and adding posterior femoral augments
TIGHT	**CAUSES** 1. Excessive distal femoral resection or elevation of femoral joint line with excessive tibial thickness 2. Overly increased posterior condylar offset or oversized femoral component with excessive posterior positioning with inadequate tibial thickness 3. Excessive tibial sided thickness attempting to inadequately fill a loose extension gap due to excessive distal femur resection and overstuffing the flexion gap **POSSIBLE SOLUTION(S)** 1. Distalize the femur with distal femoral augments and downsize the tibial thickness to loosen the tight flexion gap 2. Anteriorly shift the femur or down-size the femoral component and decrease posterior augments, then increase tibial thickness to simultaneously balance the now looser flexion gap and loose extension gap 3. Combination of distalizing the femur with distal femur augment and downsize femur/decrease posterior condylar offset with adjustment of tibial thickness	**CAUSES** 1. Excessive distal femoral resection with excessive tibial thickness 2. Excessive posterior condylar offset (rare) 3. Reversed tibial slope (rare) **POSSIBLE SOLUTION(S)** 1. Distalize the femur with distal femoral augments to increase extension gap tightness and downsize the tibial thickness to loosen the now tighter flexion gap and tight flexion gap simultaneously 2. Anteriorly shift femur or down-size the femoral component and/or decrease posterior augments 3. Improve tibial slope (target 0-3° of posterior tibial slope)	**CAUSES** 1. Distalized femoral joint line and excessive posterior condylar offset 2. Excessive tibial thickness **POSSIBLE SOLUTION(S)** 1. Resect additional distal femur or reduce distal femoral augments *-and-* Anteriorly shift femur or down-size the femoral component and/or decrease posterior augments 2. Decrease poly thickness, remove tibial augments, or resect additional tibia

Scan for Gap Balancing Chart