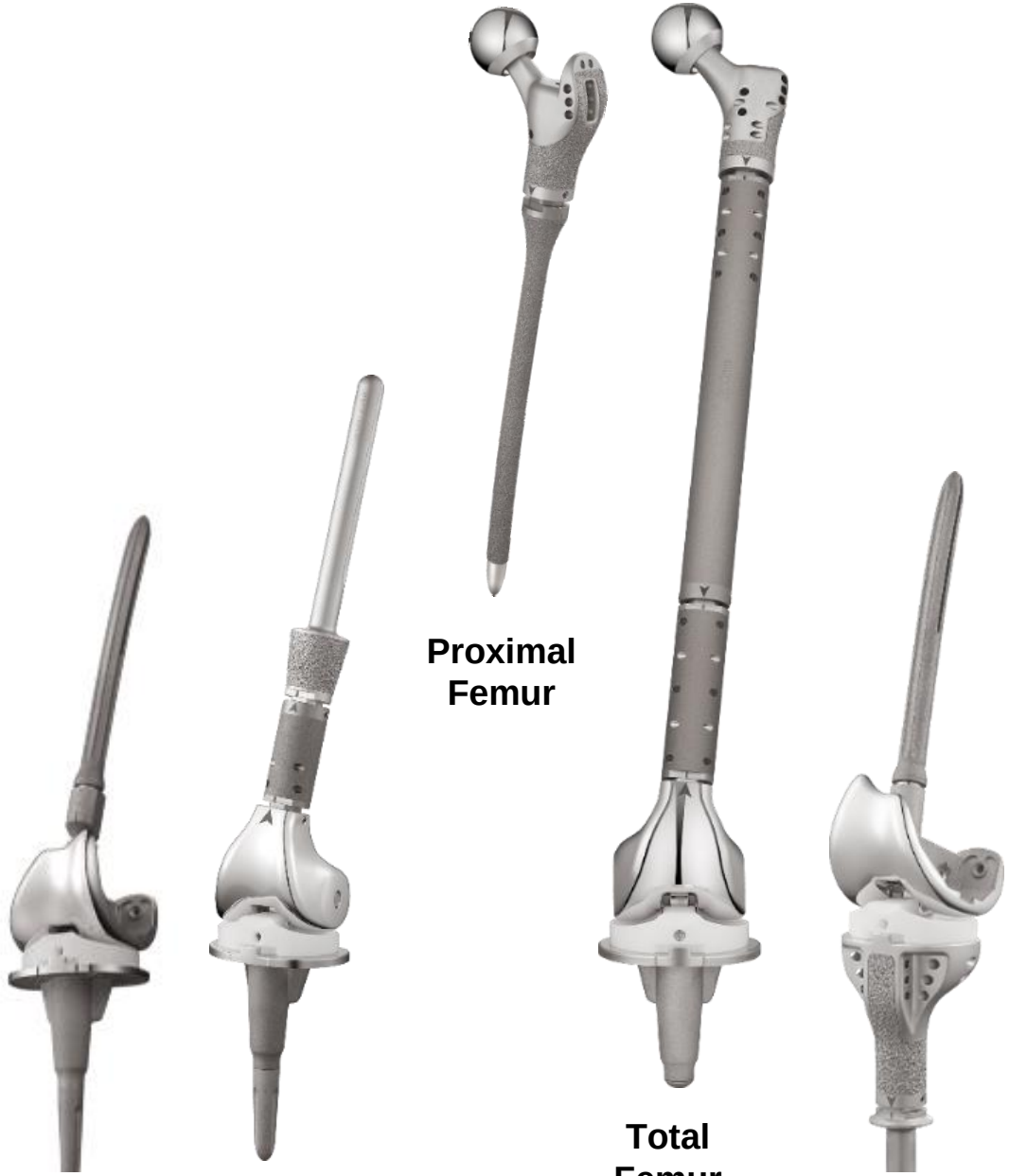
Knee Portfolio

U2™ Total Knee System

U2 PSA™ Revision Knee

USTARII™ Primary and Revision Hinge Knee

USTARII™ Limb Salvage System



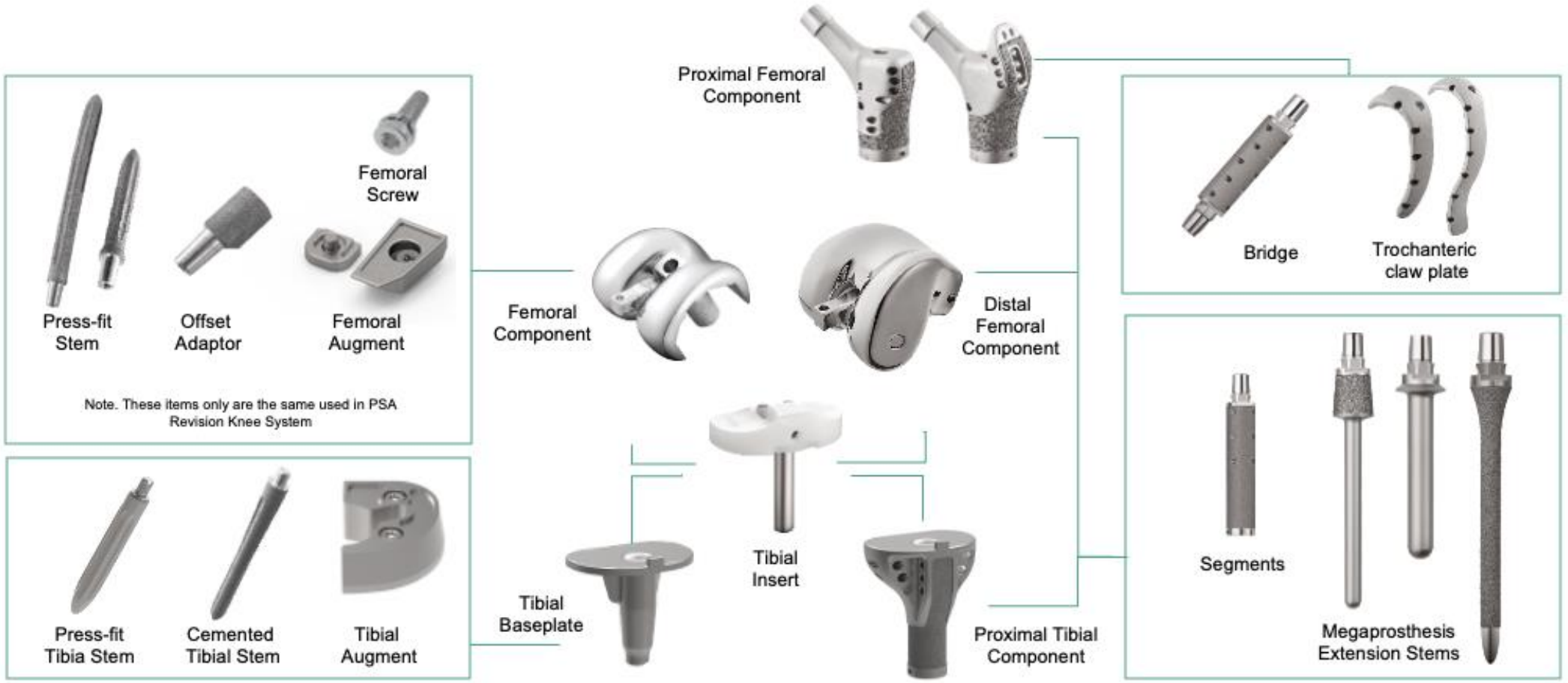
The USTARII™ Limb Salvage System

USTARII has a comprehensive range of segment and stem options and is designed to offer soft-tissue ‘friendly’ components with a more secured connection.

Features a bone preserving implant design and reduced length segment options to allow the opportunity for reduced resections and the chance to preserve bone.

The USTARII Limb Salvage System has the same novel hinge mechanism as the USTARII Primary and Revision Hinge Knee System.

USTARII Limb Salvage System. ***System Overview.***



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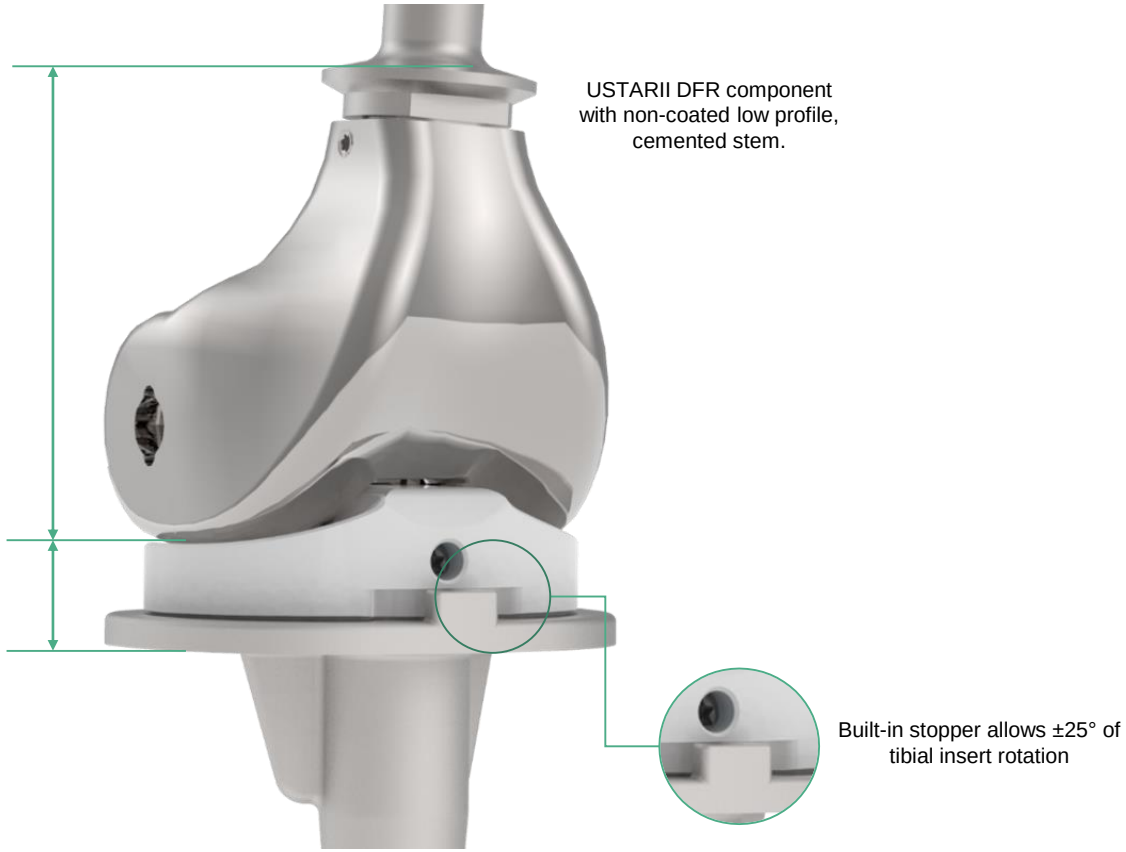
USTARII Limb Salvage System. *Distal Femoral Replacement (DFR).*

Offered in standard and pediatric configurations. The standard option is size Small with a 52 mm AP and 56 mm ML profile. Includes Left and Right options. The component height is 55 mm. Made with CoCr.



Distal Femoral Replacement (DFR) Minimum Resection Comparison	
Implant Company and System	Minimal Resection
UNITED ORTHOPEDIC USTARII™ LIMB SALVAGE SYSTEM	**61 mm**
STRYKER® GLOBAL MODULAR REPLACEMENT SYSTEM (GMRS)	76 mm
DEPUY® LIMB PRESERVATION SYSTEM (LPS®)	80 mm
ZIMMER-BIOMET® SEGMENTAL SYSTEM	90 mm
ZIMMER-BIOMET® SEGMENTAL MOST OPTIONS® SYSTEM	96 mm
ZIMMER-BIOMET® ORTHOPEDIC SALVAGE SYSTEM (OSS™)	N/A
ONKOS® ELEOS™ LIMB SALVAGE SYSTEM	71 mm
LINK® BIOCORP MEGASYSTEM-C	N/A

N/A = Information not available.

[1] Using Non-coated, low profile cemented stem

[2] Minimum resection includes component height plus megaprosthesis stem height (6 mm for the non-coated, low profile cemented stem).

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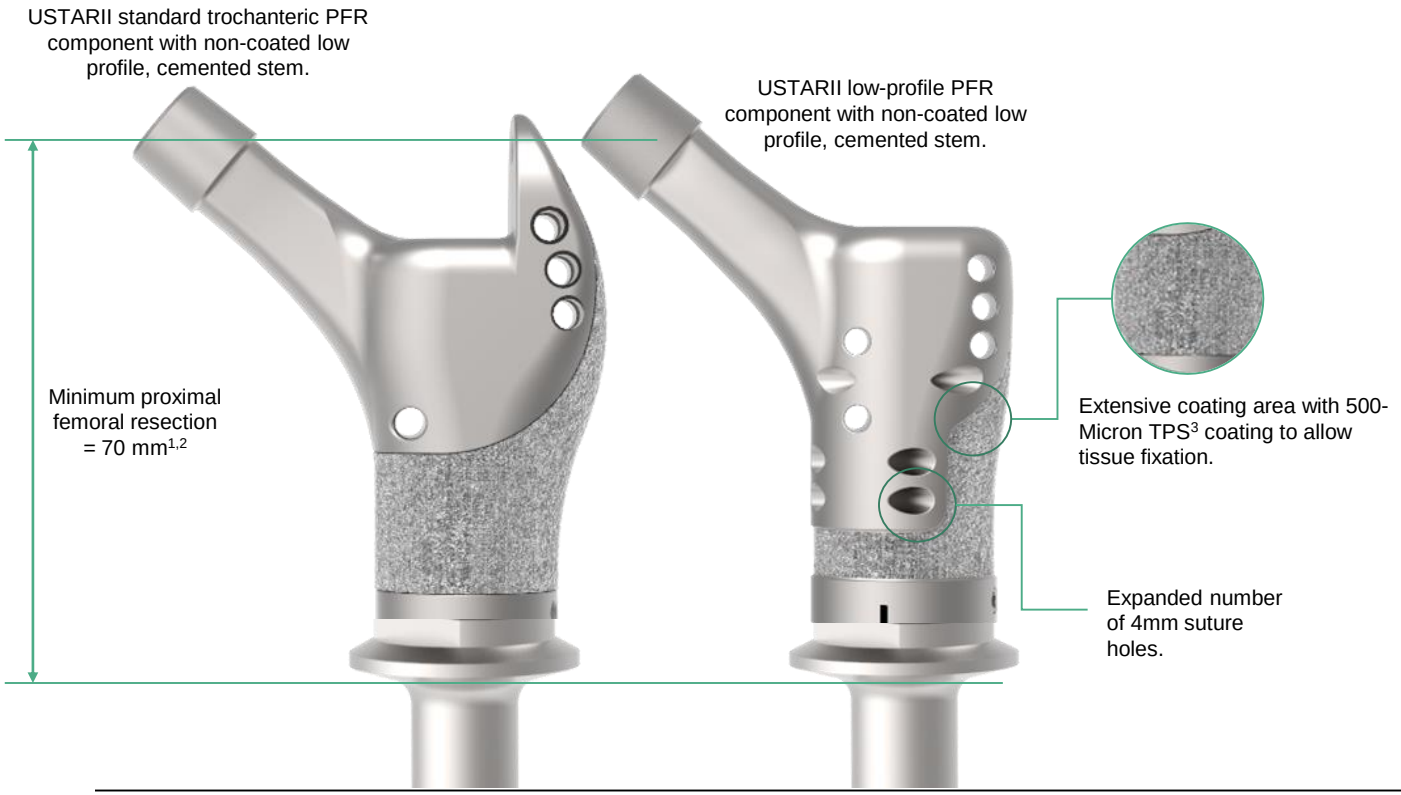
USTARII Limb Salvage System. ***Proximal Femoral Replacement (PFR).***

Offered in standard trochanteric and low-profile configurations. Each configuration is size Small and has a Left and Right option. The component has 15° femoral ante-version and a 130° neck angle. The component height is 64 mm. Made with CoCr.



Proximal Femoral Replacement (PFR) Minimum Resection Comparison	
Implant Company and System	Minimal Resection
UNITED ORTHOPEDIC USTARII™ LIMB SALVAGE SYSTEM	**70 mm**
STRYKER® GLOBAL MODULAR REPLACEMENT SYSTEM (GMRS)	81 mm
DEPUY® LIMB PRESERVATION SYSTEM (LPS®)	90 mm
ZIMMER-BIOMET® SEGMENTAL SYSTEM	N/A mm
ZIMMER-BIOMET® SEGMENTAL MOST OPTIONS® SYSTEM	112 mm
ZIMMER-BIOMET® ORTHOPEDIC SALVAGE SYSTEM (OSS™)	70 mm
ONKOS® ELEOS™ LIMB SALVAGE SYSTEM	104 mm
LINK® BIOCORP MEGASYSTEM-C	N/A

N/A = Information not available.

Trochanteric Claw plates. An extra option for soft tissue re-attachment. Offered in small 5mm length and Large 80 mm lengths.

[1] Using Non-coated, low profile cemented stem.

[2] Minimum resection includes component height plus megaprosthesis stem height (6 mm for the non-coated, low profile cemented stem).

[3] Titanium Plasma Spray (TPS) coating.

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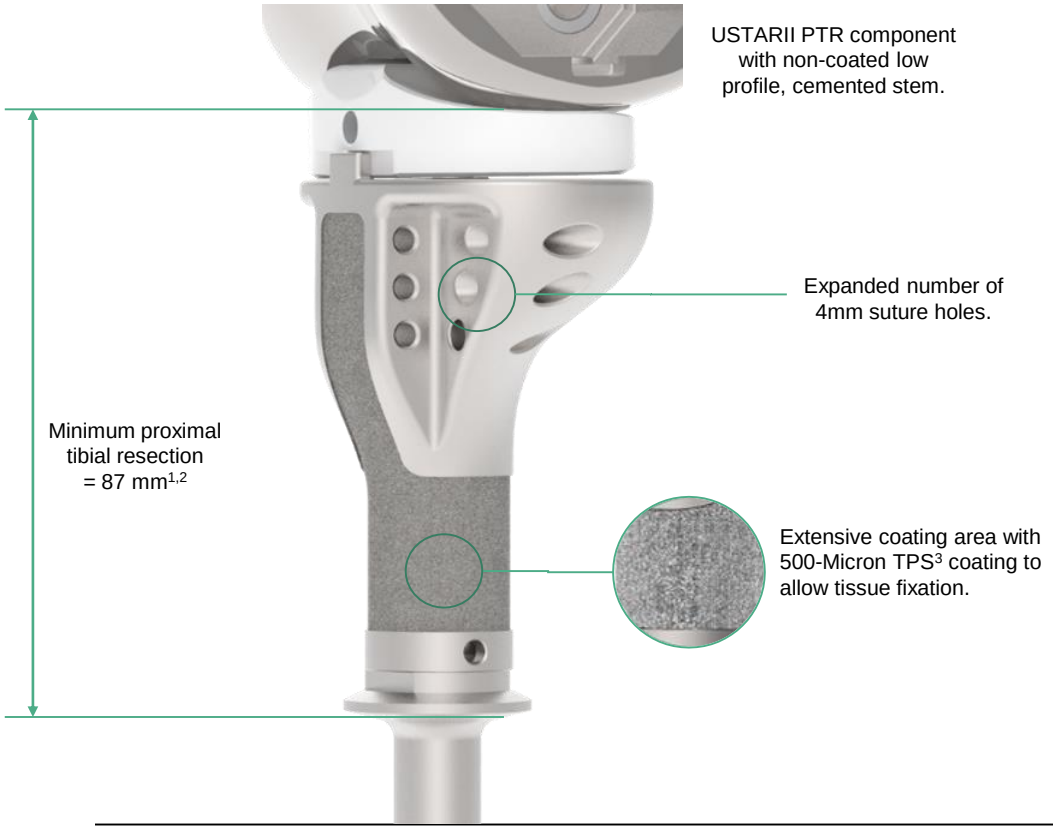
USTARII Limb Salvage System. *Proximal Tibial Replacement (PTR).*

Offered in standard and pediatric configurations. The standard option is size Small with a 42 mm AP and 63 mm ML profile. The component height is 81 mm. Made with CoCr.



Proximal Tibial Replacement (PTR) Minimum Resection Comparison	
Implant Company and System	Minimal Resection [A]
UNITED ORTHOPEDIC USTARII™ LIMB SALVAGE SYSTEM	**87 mm**
STRYKER® GLOBAL MODULAR REPLACEMENT SYSTEM (GMRS)	99 mm
DEPUY® LIMB PRESERVATION SYSTEM (LPS®)	105 mm
ZIMMER-BIOMET® SEGMENTAL SYSTEM	110 mm
ZIMMER-BIOMET® SEGMENTAL MOST OPTIONS® SYSTEM	115 mm
ZIMMER-BIOMET® ORTHOPEDIC SALVAGE SYSTEM (OSS™)	90 mm
ONKOS® ELEOS™ LIMB SALVAGE SYSTEM	108 mm
LINK® BIOCORP MEGASYSTEM-C	N/A

N/A = Information not available.
[A] Measurement typically but does not always include thickness of the thinnest tibial insert option.

[1] Using Non-coated, low profile cemented stem.
[2] Minimum resection includes implant height plus megaprosthesis stem height (6 mm for the non-coated, low profile cemented stem).
[3] Titanium Plasma Spray (TPS) coating.

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USTARII Limb Salvage System. *Total Femoral Replacement (TFR).*

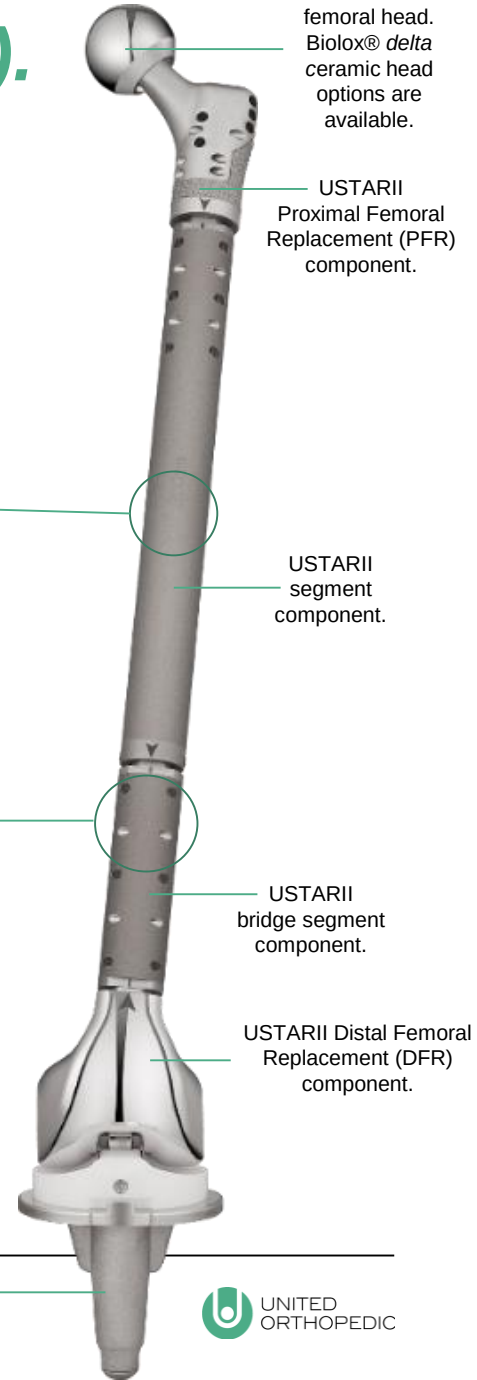
Combines the PFR and DFR components with a bridge segment option.

When complete replacement of the femur is required.

Reference Chart for the Resection of Total Femoral Replacement				
Femur Length	Component	Bridge	Segment	Component
199 mm	Proximal Femoral Component 64 mm	Bridge Component 80 mm	0	Distal Femoral Components 55 mm
224 mm			25 mm	
229 mm			30 mm	
239 mm			40 mm	
249 mm			50 mm	
259 mm			60 mm	
269 mm			70 mm	
279 mm			80 mm	
289 mm			90 mm	
299 mm			100 mm	
309 mm			110 mm	
319 mm			120 mm	
329 mm			130 mm	
339 mm			140 mm	
349 mm			150 mm	
359 mm			160 mm	
369 mm			170 mm	
379 mm			180 mm	
389 mm			190 mm	
399 mm			200 mm	
409 mm			210 mm	
419 mm			220 mm	

An expanded range of segment options are provided to reduce the need for using multiple segment components to achieve the target construct length.

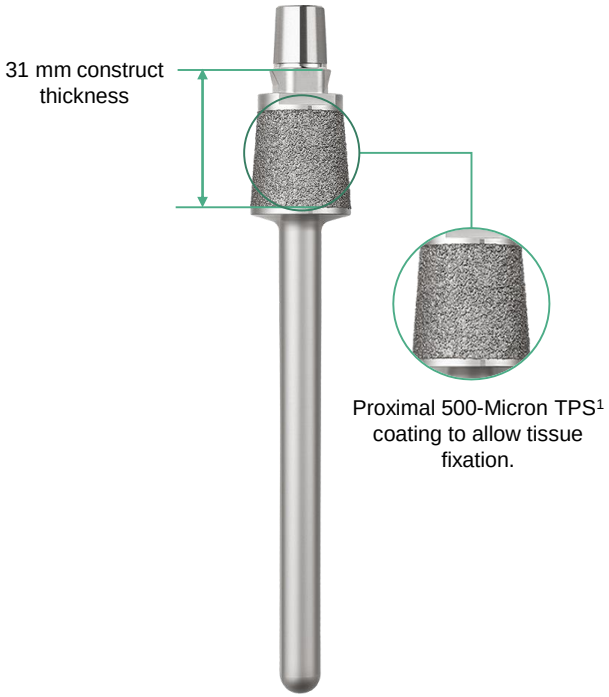
USTARII 80 mm bridge segment.



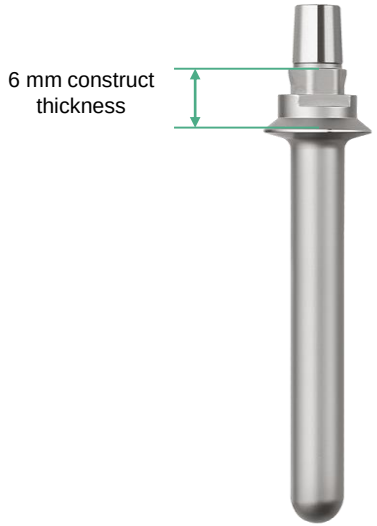
USTARII Limb Salvage System. 3 Megaprosthesis ***Cemented and Press-Fit options.***

Includes over 50 different megaprosthesis stem configurations. Including fixed and curved, coated and low-profile non-coated cemented stems, and full-coated cementless press-fit stems.

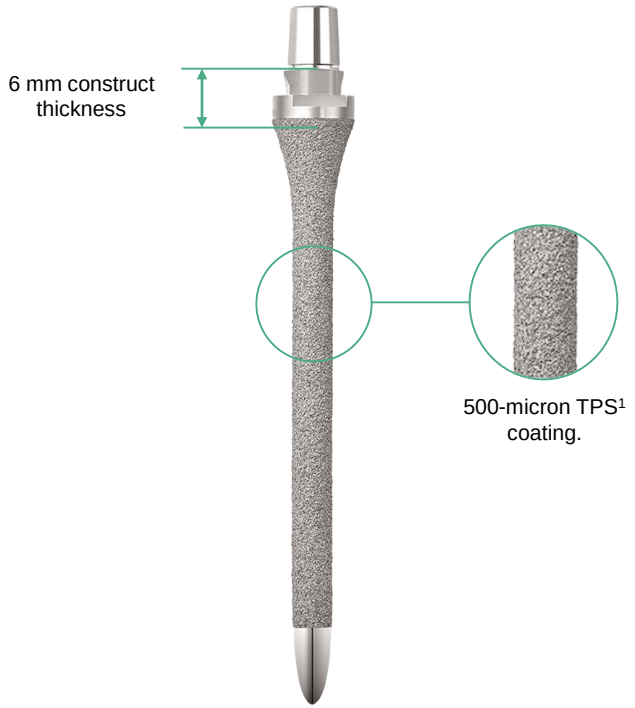
Coated cemented stem (Forged CoCr)



Non-coated, low profile cemented stem (Forged CoCr).



Full-coated press-fit stem (Titanium)



[1] Titanium Plasma Spray (TPS) coating.

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USTARII Limb Salvage System. 3 Megaprosthesis ***Cemented and Press-Fit options.***

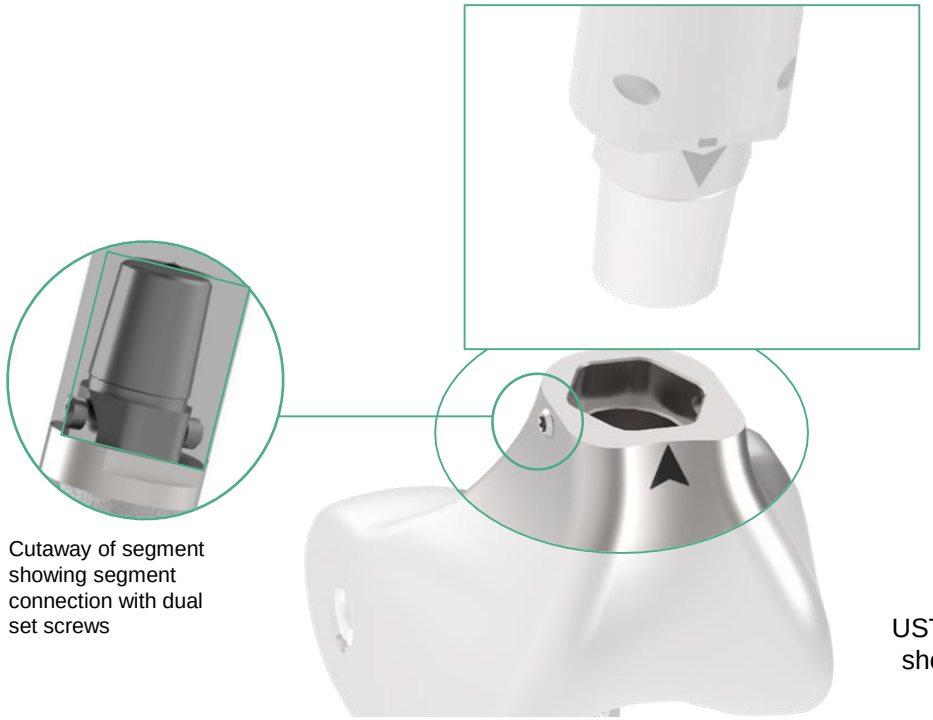
Includes over 50 different megaprosthesis stem configurations. Including fixed and curved, coated and low-profile non-coated cemented stems and full-coated cementless press-fit stems.

Intramedullary	Stem Type	Coated cemented stem (20 Options)	Non-coated, low profile cemented stem (20 Options)	Full-coated press-fit stem (16 Options)
Length	100mm	Straight	Straight	
	125mm	Curved	Curved	
	150mm			Straight
	200mm			Curved
Diameter		9/11/13/15 and 17 mm		11/13/15 and 17 mm (Coating included in thickness)

USTARII Limb Salvage System. Novel connection for ***Enhanced Junction Fixation.***

Reinforced junction design. Designed with dual set screws and anti-rotation hex connection.

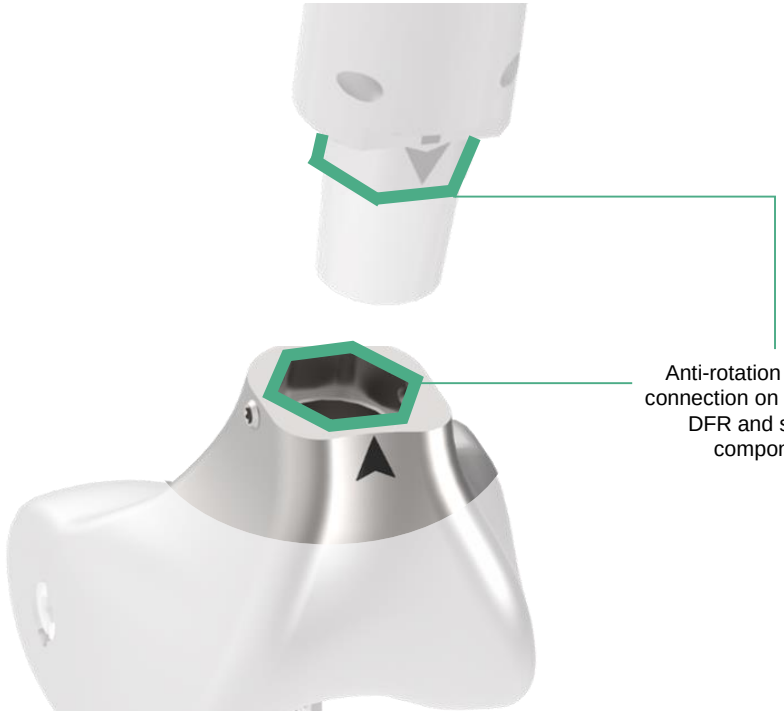
Dual set screws designed to enhance fixation vs. taper-fixation only designs.



Cutaway of segment showing segment connection with dual set screws

USTARII DFR component showing connection with segment.

Anti-rotation Hex Connection to prevent mal-connection.

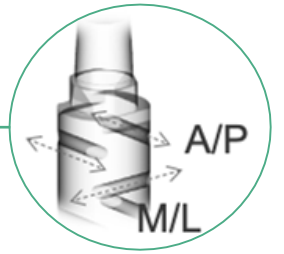


Anti-rotation hexagonal connection on the USTARII DFR and segment components.

USTARII Limb Salvage System. Includes expanded ***range of segment options***.

Offering a full range of small and large segment lengths. There are 21 options from 25 to 220 mm lengths. The component diameter is 22mm. Made with Titanium (Ti) Alloy.

USTARII 80 mm bridge segment.



Wire Holes angled in both AP and ML directions

Wire holes are placed near the joint connection

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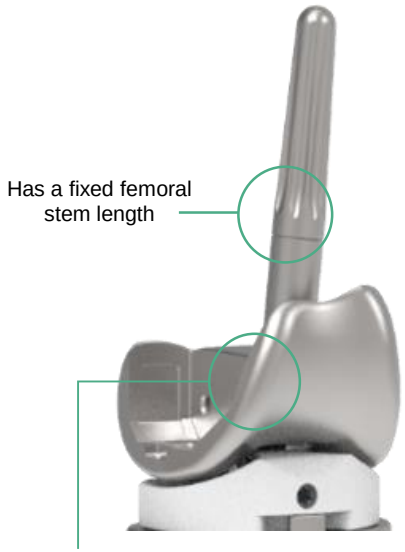
USTARII Limb Salvage System. Pediatric implant providing ***Reduced Size*** Options.

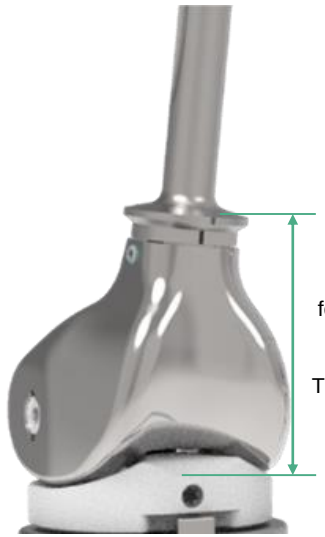
The Pediatric (XS) system utilizes a dedicated instrument set. Pediatric XS components are compatible only with each other (E.g. a DFR component with a hinge tibial baseplate, or a hinge femur with a PTR component). Pediatric XS components <u>are</u> compatible with standard size implant segments and megaprosthesis stems.

Pediatric (XS) Hinged Femoral Component



Distal and posterior femoral resections are 7 mm.
No augment or offset options are available.

Pediatric (XS) Distal Femoral Replacement (DFR)



Pediatric (XS) Hinged Tibial Baseplate

Fixed Boss Length, No augment or stem extension options available.

Pediatric (XS) Proximal Tibial Replacement (PTR)

[1] Using Non-coated, low profile cemented stem. [2] Minimum resection includes implant height plus megaprosthesis stem height (6 mm for the non-coated, low profile cemented stem).
Note. There is no Pediatric (XS) Proximal Femoral Replacement (PFR) or Total Femoral Replacement (TFR) option.
Femoral component dimensions. AP = 45 mm, ML= 50 mm. Tibial component dimensions. AP = 38 mm, ML= 58 mm

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Limb Salvage System Competitive Comparison – Distal Femoral Replacement, Segments & Oncology Stems.

Note. Revision Hinge Options shown on a different page. Implant Segment and Oncology Extension Stem comparisons also apply to Proximal Femoral, Proximal Tibial and Total Femoral Implant Systems.

		UNITED ORTHOPEDIC USTARII™ LIMB SALVAGE SYSTEM	STRYKER® GLOBAL MODULAR REPLACEMENT SYSTEM (GMRS)	DEPUY ® LIMB PRESERVATION SYSTEM (LPS®)	ZIMMER-BIOMET® SEGMENTAL SYSTEM	ZIMMER-BIOMET® SEGMENTAL MOST OPTIONS® SYSTEM	ZIMMER-BIOMET® ORTHOPEDIC SALVAGE SYSTEM (OSS™)	ONKOS® ELEOS™ LIMB SALVAGE SYSTEM	LINK® BIOCORP MEGASYSTEM-C
									
Distal Femoral Replacement (DFR)	# SIZES/CONFIGURATIONS	2[1]	2	2	2	3	6	1	3
	ROTATING PLATFORM	± 25°	N/A	N/A	N/A	N/A	N/A	± 15° or Unrestricted	Rotational and Fixed Options[8]
	% CONDYLAR LOADING	95% or greater	N/A	N/A	95%	N/A	N/A	N/A	N/A
	MIN POST JUMP HEIGHT	>40mm	38+	27+	At least 40 mm	N/A	N/A	N/A	N/A
	COMPONENT ASSEMBLY	Pre-assembled	Assembly required	Assembly required	Assembly required	Assembly required	Assembly required	Assembly required	Assembly required
	MIN DISTAL FEMORAL RESECTION	61 mm	76 mm[2]	80 mm	90 mm	96 mm	N/A	71 mm	N/A
	DFR IMPLANT LENGTH	55 mm	65 mm	60 mm	58 mm	65 mm	70 mm	65 mm	65 mm
	MIN TIBIAL RESECTION	12mm	18 mm[3]	17 mm[2]	12 mm[2]	12 mm[9]	N/A	20 mm	2 or 10 mm[7]
	HINGE MECHANISM REPLACEMENT KIT	Not Available	Available	Available	Available	Available	Available	Available	Available
Implant Segments	# OPTIONS	21	13	9	15	8	14[9]	7	8
	INCREMENT OPTIONS	25 mm and 30 to 220 mm in 10 mm increments	30, 40, 50, 60, 70, 80, 100, 120, 140, 160, 180, 200 and 220 mm	25, 30, 35, 40, 45, 65, 85, 105 and 125[4] mm	30, 35, 40, 45, 50, 55, 60, 80, 100, 120, 140, 160, 180, 200 and 220 mm	30, 42.5, 55, 67.5, 80, 105, 130 and 155 mm	30, 40, 50, 70, 90, 110, 130, 150, 170, 190, 210 and 230 mm[9]	40, 50, 60, 70, 90, 110 and 140 mm	30, 40, 50, 60, 100, 150, 200 and 250 mm
Oncology Extension Stems	# OPTIONS	56	36	40[5]	Over 40[6]	Multiple[6]	67	37	Over 80[6]
	FIXATION TYPE	Cemented and Press-Fit	Cemented and Press-Fit	Cemented and Porous (Press-Fit)	Cemented and Porous (Press-Fit)	Cemented and Porous (Press-Fit)	Interlock (Cemented) and Porous (Press-Fit)	Cemented and Canal Filling (Press-Fit)	Cemented and Press-Fit

Note. All United Orthopedic specifications are for standard, non-XS or Pediatric Options

N/A = Information Not Available l DF = Distal Femoral l + Friesenbichler; Evaluation of Stability of RH Hinge Knee Prostheses; A Biomechanical Study ; ISRN ; 2013

[1] Includes XS Pediatric Size l [2] E/O = Estimate Only l [3] 18mm tibial resection required for MRH baseplate. Per technique typically, 10-12mm removed from proximal tibia, femoral resection usually is6-8mm longer than prosthesis l [4] Per technique segments may be combined for overall lengths at 5mm increments from 25 to 250 mm l [5] Options for LPS DFR with LPS Stem l 6 Multiple options available with modular collars and stem extensions l [7] Per technique these are recommended resection lengths, l [8]Also includes an arthrodesis fusion option l [9] Includes multiple modular options l [9] Per technique assumes resection does not raise the joint line.

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Limb Salvage System. Competitive Comparison – Proximal Femoral Replacement.

		UNITED ORTHOPEDIC USTARII™ LIMB SALVAGE SYSTEM	STRYKER® GLOBAL MODULAR REPLACEMENT SYSTEM (GMRS)	DEPUY ® LIMB PRESERVATION SYSTEM (LPS®)	ZIMMER-BIOMET® SEGMENTAL SYSTEM	ZIMMER-BIOMET® SEGMENTAL MOST OPTIONS® SYSTEM	ZIMMER-BIOMET® ORTHOPEDIC SALVAGE SYSTEM (OSS™)	ONKOS® ELEOS™ LIMB SALVAGE SYSTEM	LINK® BIOCORP MEGASYSTEM-C
									
Proximal Femoral Replacement (PFR)	# SIZES/CONFIGURATIONS	2[1]	2[1]	6[1,3]	3[1]	2[1]	4[5]	1	20[7]
	FEMORAL NECK°	130°	135°	135°	N/A	N/A	N/A	N/A	126° and 135°
	FEMORAL NECK ANTE-VERSION°	15°	15°	0° and 15°	Adjustable in 20° Increments	M/A	15°	N/A	N/A
	IMPLANT COATING	TPS[2]	Porous-Coated	POROCOAT® Porous Coating[4]	Non-Coated	Non-Coated	PPS Coating[6]	Non-Coated	Microporous
	MIN PROXIMAL FEMORAL RESECTION	70 mm	81 mm	90 mm	N/A	112 mm	70 mm	104 mm	N/A
	PFR IMPLANT HEIGHT	64 mm	70 mm	70 mm	80 mm	80 mm	70 mm	98 mm	35 and 65 mm

Note. All United Orthopedic specifications are for standard, non-XS or Pediatric Options

N/A = Information Not Available

[1] Includes Standard and Low-Profile options (No XS Pediatric Size Offered) l [2] Titanium Plasma Spray Coating l [3] 0° and 15° options l [4] POROCOAT Porous Coating is commercially pure titanium sintered beads l [5] Includes Low Profile, Finn®-Style Elliptical Modular and Letson™ Modular options l [6] Porous Plasma Spray (PPS) titanium coating l [7] 'Massive', Collared, Non-Collared, XXL Collared and XXL Non-Collared

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Limb Salvage System. Competitive Comparison – Proximal Tibial Replacement.

Note. Revision Hinge Options shown on a different page.

		UNITED ORTHOPEDIC USTARII™ LIMB SALVAGE SYSTEM	STRYKER® GLOBAL MODULAR REPLACEMENT SYSTEM (GMRS)	DEPUY ® LIMB PRESERVATION SYSTEM (LPS®)	ZIMMER-BIOMET® SEGMENTAL SYSTEM	ZIMMER-BIOMET® SEGMENTAL MOST OPTIONS® SYSTEM	ZIMMER-BIOMET® ORTHOPEDIC SALVAGE SYSTEM (OSS™)	ONKOS® ELEOS™ LIMB SALVAGE SYSTEM	LINK® BIOCORP MEGASYSTEM-C
									
Proximal Tibial Replacement (PTR)	# SIZES/CONFIGURATIONS	**2**[1]	2	1	3	1	5[5]	1	3
	IMPLANT COATING	**TPS**[2]	Porous-Coated	POROCOAT® Porous Coating[4]	Trabecular Metal™ Coating	Non-Coated	PPS Coating	HA Coating 7	Non-Coated
	MIN PROXIMAL TIBIAL RESECTION	**87 mm**	99 mm	105 mm	110 mm	115 mm	90 mm[7]	108 mm[3]	N/A
	PTR IMPLANT HEIGHT	**81 mm**[3]	80 mm[3]	73 mm + 12 mm bearing	70 mm + 8 mm bearing	85 mm + 4 mm Hinge assembly + 6 mm Insert	Varies based on options	87 mm	64 mm

Note. All United Orthopedic specifications are for standard, non-XS or Pediatric Options

N/A = Information Not Available

[1] Includes XS Pediatric Size l [2] Titanium Plasma Spray Coating l [3] Includes thickness of thinnest tibial insert l [4] POROCOAT Porous Coating is commercially pure titanium sintered beads l [5] Includes Modular and Non-Modular, and Standard and Reduced Size/Pediatric options l [6] Porous Plasma Spray (PPS) titanium coating l 7 'Nano-thin' Hydroxy-Apatite (HA) coating, in development in 2019, reported in clinical use in 2021.

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Limb Salvage System. Competitive Comparison – Total Femoral Replacement.

Note. Revision Hinge Options shown on a different page.

		UNITED ORTHOPEDIC USTARII™ LIMB SALVAGE SYSTEM	STRYKER® GLOBAL MODULAR REPLACEMENT SYSTEM (GMRS)	DEPUY ® LIMB PRESERVATION SYSTEM (LPS®)	ZIMMER-BIOMET® SEGMENTAL SYSTEM	ZIMMER-BIOMET® SEGMENTAL MOST OPTIONS® SYSTEM	ZIMMER-BIOMET® ORTHOPEDIC SALVAGE SYSTEM (OSS™)	ONKOS® ELEOS™ LIMB SALVAGE SYSTEM	LINK® BIOCORP MEGASYSTEM-C
									
Total Femoral Replacement (TFR)	BRIDGE COMPONENT LENGTH	80 mm[1]	Yes	55 mm	Yes	YES	100 and 300 mm options	40 to 140 mm options	120 to 360 mm options
	HAS LENGTH EXPANDING OPTION AVAILABLE	No	Yes[2]	N/A	Yes[3]	Yes[3]	Yes[3]	No	No
	HAS ARTHRODESIS (FIXED/FUSED FEMUR) OPTION AVAILABLE	No	Yes	N/A	Yes[4]	Yes[4]	Yes[4]	No	Yes
	HAS SEGMENTAL (MID-SHAFT FEMUR) INTERCALARY OPTION AVAILABLE	No	Yes	Yes	Yes	Yes	Yes	No	Yes

Note. All United Orthopedic specifications are for standard, non-XS or Pediatric Options

N/A = Information Not Available

[1] Includes Standard option (No XS Pediatric Size Offered) l [2] GMRS Distal Femoral Growing Prosthesis system l [3] Zimmer Biomet Compress® Device l [4] Zimmer Biomet OSS™ Modular Arthrodesis System

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THANK YOU