stryker

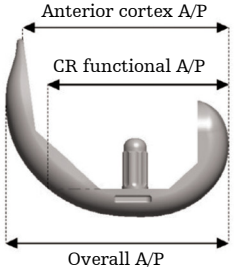
Triathlon® Total Knee System

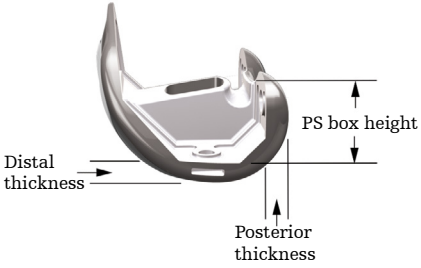
reference guide

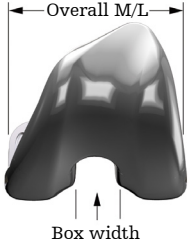
Size

Component and size offering							
Femur	Left/Right, 8 sizes, Size 1-8						
Tibia	9 sizes, Size 0-8						
Insert	CR: 9, 10, 11, 12, 13*, 14, 16, 19* CS: 9, 10, 11, 12, 13*, 14, 16, 19, 22* PS: 9, 10, 11, 12, 13*, 14, 16, 19, 22* TS*: 9, 11, 13, 16, 19, 22, 25, 28, 31						
All-Polyethylene Tibia	8 sizes, Size 1-8 9,11,13,16 thickness for CS and PS						
Symmetric Patella		S27 × 8	S29 × 8	S31 × 9	S33 × 9	S36 × 10	S39 × 11
	All-Poly	√	√	√	√	√	√
	Tritanium	–	–	√	√	√	√
Asymmetric Patella		–	A29 × 9	A32 × 10	A35 × 10	A38 × 11	A40 × 11
	All-Poly	–	√	√	√	√	√
	Tritanium	–	√	√	√	√	√
	Beaded PA	–	–	√	√	√	√

Note: Thickness for tibial inserts, all-polyethylene tibiae and patellae are in millimeters.
*These insert options are not available for Size 0.

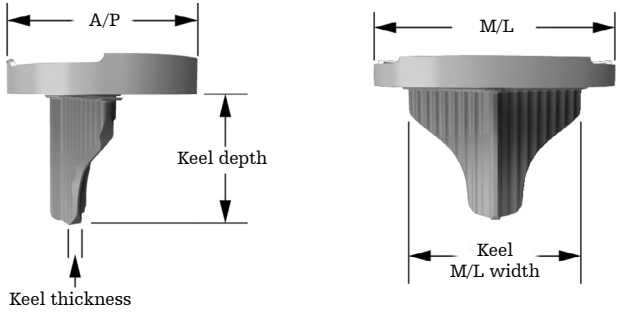






Cemented CR and PS Femur | Cementless Beaded PA CR and PS Femur								
Size	1	2	3	4	5	6	7	8
Overall A/P	53	56	59	62	65	68	71	75
Anterior cortex A/P	49	52	54	57	61	64	66	70
Overall M/L	59	62	65	68	71	74	77	80
Posterior thickness	8.5							
Distal thickness	8.5							
Condyle length	32	33	34	35	36	37	38	39
CR functional A/P	45	47	49	50	52	55	56	58
PS box outer width	20.8							
PS box inner width	16.2							
PS box height	20.5							

Note: The bone-facing side of cemented femoral components allows for a cement mantle, and the bone-facing side of cementless femoral components features beads and PA. The beads have peaks and valleys that can protrude out to a maximum of 0.4 mm on a plane. All dimensions are in millimeters.

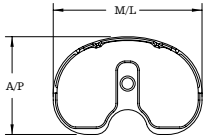


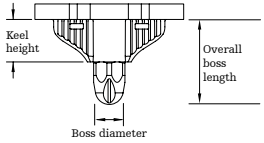
Primary Baseplate | Tritanium Baseplate | Beaded PA Baseplate | Screw-Fixed Baseplate									
Size	0*	1	2	3	4	5	6	7	8
A/P	39	40	42	44	46	49	52	56	60
M/L	59	61	64	67	70	74	77	80	85
Keel depth	28	28	28	28	34	34	34	39	39
Keel M/L width	40	40	40	40	52	52	52	58	58
Keel thickness	2.6-3.6								

Note: All dimensions are in millimeters.

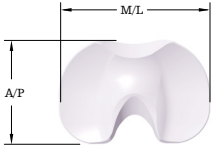
*Size 0 is only available for the Primary Baseplate and Tritanium Baseplate.

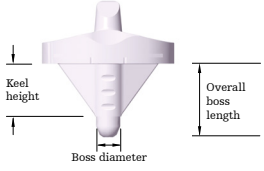
Universal Baseplate



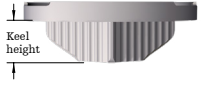


All-Polyethylene Tibial Component



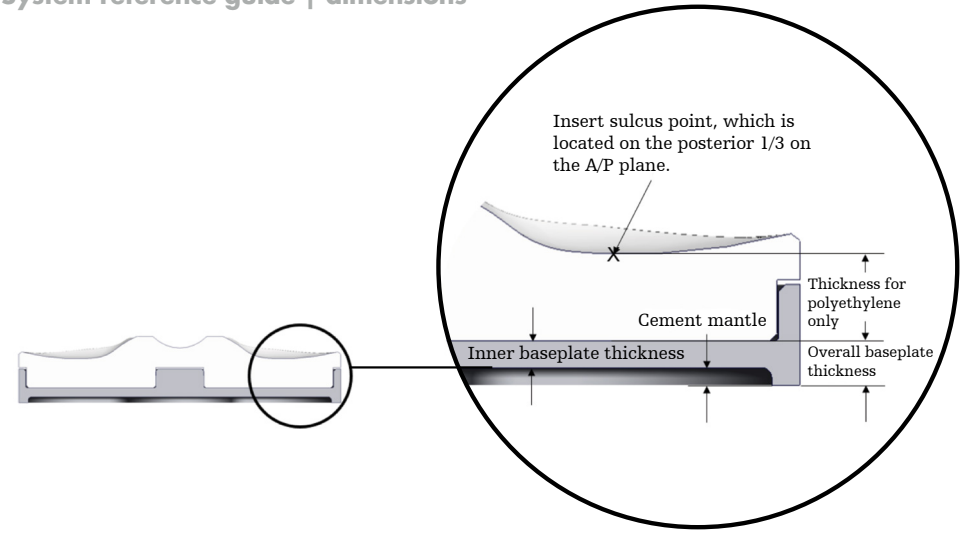


Low-Profile Baseplate



Universal Baseplate | Low-Profile Baseplate | All-Polyethylene Tibial Component									
Size		1	2	3	4	5	6	7	8
A/P		40	42	44	46	49	52	56	60
M/L		61	64	67	70	74	77	80	85
Keel M/L width	**Universal**	40	40	40	52	52	52	58	58
	Low-Profile	40	40	40	52	52	52	58	58
	All-Poly	42	42	42	53	53	53	53	53
Keel S/I height	**Universal**	20	20	20	20	20	20	20	20
	Low-Profile	16	16	16	16	16	16	16	16
	All-Poly	20	20	20	28	28	28	28	28
Overall boss length		Universal Baseplate: 40 | All-Polyethylene Tibial Component: 39							
Boss diameter		Universal Baseplate: 16 | All-Polyethylene Tibial Component: 13							

Note: All dimensions are in millimeters.



Primary Baseplate | Universal Baseplate | Low-Profile Baseplate	
Overall baseplate thickness	3.2
Inner baseplate thickness	1.9
Cement mantle underneath baseplate	1.3
Cement mantle on anterior and posterior side of the keel	Primary, Universal, Low-Profile Baseplate: 0.5 All-Polyethylene Tibial Component: 1.6 total (0.8 per side)
Thickness of polyethylene in a 9mm insert	6.2

Note: All dimensions are in millimeters.

Prepared bone

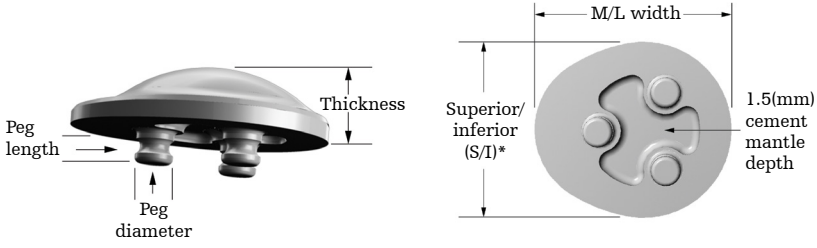
Press fit

Pegs are cruciform in shape, and the press fit is not circumferential. The press fit is on the flutes

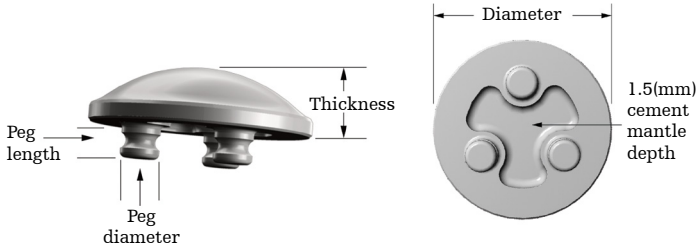
Tritanium Baseplate									
Peg diameter	7								
Tritanium foam thickness	1.14								
Keel press fit on each side	When prepared with Cementless Keel Punch: AP: 0.36								
Peg press fit	When prepared with 1/8″ Peg Drill: 3.7 / When prepared with the 7/32″ Dense Peg Drill: 1.4								
Peg length	Size 0	Size 1	Size 2	Size 3	Size 4	Size 5	Size 6	Size 7	Size 8
	7	7	8	9	9	10	11	11	12

Note: All dimensions are in millimeters.

Asymmetric Patella



Symmetric Patella



All-Poly Patella dimensions

Asymmetric Patella

Size	A29 × 9	A32 × 10	A35 × 10	A38 × 11	A40 × 11
Superior/inferior (S/I) width	29	32	35	38	40
M/L width	33	36	39	42	44
Thickness	9	10	10	11	11
Peg diameter	5.7				
Peg length	5				

Symmetric Patella

Size	S27 × 8	S29 × 8	S31 × 9	S33 × 9	S36 × 10	S39 × 11
Patella diameter	27	29	31	33	36	39
Thickness	8	8	9	9	10	11
Peg diameter	5.7					
Peg length	5					

Tritanium Metal-Backed Patella dimensions

Asymmetric Patella

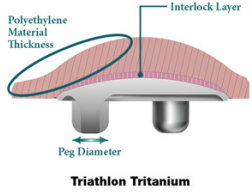
Size	A29 × 9	A32 × 10	A35 × 10	A38 × 11	A40 × 11
Superior/inferior(S/I) width	29	32	35	38	40
M/L width	33	36	39	42	44
Thickness	9	10	10	11	11
Peg diameter	6.1				

Symmetric Patella

Size	S31 × 9	S33 × 9	S36 × 10	S39 × 11
Patella diameter	31	33	36	39
Thickness	9	9	10	11

Peg locations are the same for symmetric and asymmetric Triathlon patellae except for Triathlon symmetric patella size 27 and size 29. The two smallest Triathlon symmetric patellae, S27 X 8 and S29 X 8, have the pegs closer together compared to the rest of the Triathlon patella size options. In the table below, patella sizes with the same colors have the same peg locations.

All-Poly Asymmetric	A29 × 9	A32 × 10	A35 × 10	A38 × 11	A40 × 11	
All-Poly Symmetric	S27 × 8	S29 × 8	S31 × 9	S33 × 9	S36 × 10	S39 × 11
Tritanium Asymmetric	A29 × 9	A32 × 10	A35 × 10	A38 × 11	A40 × 11	
Tritanium Symmetric			S31 × 9	S33 × 9	S36 × 10	S39 × 11



Triathlon Tritanium

Tritanium patella peg diameter is 6.1 mm.

Poly thickness on Tritanium Metal-Backed Patella >3.2mm for all sizes.

Peg press fit for Metal-Backed Patella

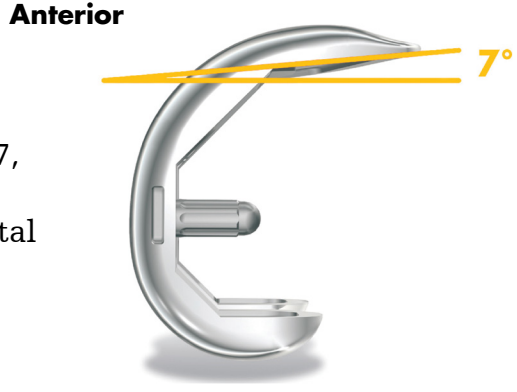
When prepared with 5.7mm standard Metal-Backed Patella Drill (6541-3-522)	0.4
When prepared with 6mm Dense Bone Patella Drill (6541-3-526)	0.15

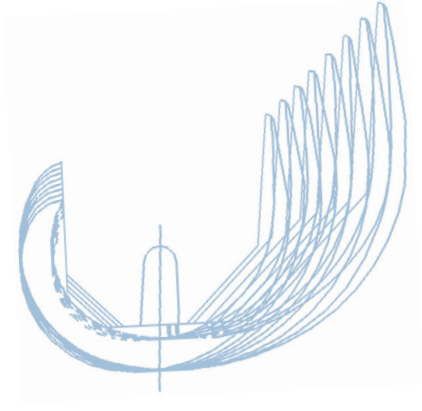
Note: All dimensions are in millimeters.

Slope and size incremental

- There is no slope built into CR, CS, PS and TS inserts.
- Triathlon CS insert has approximately 2mm more height in the anterior lip of the insert compared to Triathlon CR.

AP dimension increases only anteriorly. For sizes 1-7, size incremental is ≤3mm. For sizes 7-8, size incremental is 4mm.





Difficult primary

Femoral

- Triathlon TS augments can be used with Triathlon primary PS femur.
- Distal augments are for use with both the medial and lateral portions of the side indicated, e.g., side right is used for medial and lateral compartments on a right femur.
- Posterior augments are universal size-specific, e.g., size 4 posterior augments are for the size 4 femurs.

Tibial insert

- The PS post height is 24mm. The TS post height is 26mm.

Tibial baseplate

- Triathlon Universal Baseplate can be used with all Triathlon TS augments and stems.
- Tibial augments are size-specific and come in left medial/right lateral or right medial/left lateral configurations.

Stem type	Diameter	Length		
		50	100	150
Cemented	9	–	✓	✓
	12, 15	✓	✓	✓
Cementless	10-25 (1mm incremental)		✓	✓

Note: All dimensions are in millimeters.

Insert options

Cruciate Retaining Bearing (CR)

Condylar Stabilized Bearing (CS)

Posterior Stabilized Bearing (PS)

Total Stabilized Bearing* (TS)

*Can only be used with Universal Baseplate

Type	Varus/valgus constraint	Internal/external rotation	Maximum flexion
CR	None	+/- 20˚	150˚
CS	None	+/- 20˚	150˚
PS	None	+/- 20˚	150˚
TS	+/- 2˚	+/- 7˚	135˚

Femoral component/insert compatibility

This compatibility chart applies to the X3 inserts with catalog numbers that end with the letter E. Please reach out to your Stryker representative for the compatibility of other Triathlon tibial inserts. Size matching: one up, one down, e.g., size 5 femur with size 4 or 6 insert/baseplate.

	Insert type				
Femoral components	CR	CS	PS	PSR	TS
CR cemented	✓	✓	No	No	No
PS cemented	No	✓	✓	✓	✓
TS cemented	No	No	✓	✓	✓
CR cementless	✓	✓	No	No	No
PS cementless	No	✓	✓	✓	✓

Material

Component	Material	Chemical composition	Weight percentage
Femoral components, tibial components	Vitallium cobalt chrome alloy conforms to ASTM F75 standard	Nickel (Ni)	0.50 (max.)
		Chromium (Cr)	27.5-28.5
		Carbon (C)	0.20-0.27
		Manganese (Mn)	0.20-0.50
		Phosphorous (P)	0.015 (max.)
		Sulfur (S)	0.01 (max.)
		Silicon (Si)	0.65-0.90
		Molybdenum (Mo)	5.5-6.3
		Iron (Fe)	0.65 (max.)
		Tungsten (W)	0.1 (max.)
		Nitrogen (N)	0.125-0.200
		Oxygen (O)	100 ppm (max.)
		Aluminum (Al)	0.02 (max.)
		Boron (B)	0.01 (max.)
		Cobalt (Co)	Balance

Note: Please refer to Triathlon IFU for more material information.

Material (continued)

Component	Material	Chemical composition	Weight percentage
All-Poly Tibia, All-Poly Patella	UHMWPE		
CR, CS, PS and TS insert (Tibial inserts include locking wire. Please see below for the material composition of insert locking wire)	UHMWPE		
Insert locking wire	CoCrWNi alloy conforms to ASTM F90 standard	Nickel (Ni)	9.0-11.0
		Chromium (Cr)	19.0-21.0
		Manganese (Mn)	1.00-2.00
		Phosphorous (P)	0.04 (max.)
		Sulfur (S)	0.03 (max.)
		Silicon (Si)	0.4 (max.)
		Iron (Fe)	3.0 (max.)
		Tungsten (W)	14.0-16.0
		Cobalt (Co)	Balance

Material (continued)

Component	Material	Chemical composition	Weight percentage
Cementless stems	Titanium alloy conforms to ASTM F136 standard	Nitrogen (N)	0.05
		Carbon (C)	0.08
		Hydrogen (H)	0.012
		Iron (Fe)	0.25
		Oxygen (O)	0.13
		Aluminum (Al)	5.5 – 6.50
		Vanadium (V)	3.5 – 4.5
		Additional residual elements, each	0.10
		Additional residual elements, total	0.30
		Titanium (Ti)	Balance
Cementless beaded PA femoral, tibial, and patellar component	Vitallium cobalt chrome alloy with Peri-Apatite (PA)		
Cementless Tritanium Baseplate and Metal-Backed Patella	Baseplate: Ti-6Al-4V (Ti 6-4) and commercially pure titanium (CP Ti) Metal-Backed Patella: Commercially Pure Titanium (CP Ti)		

Components weight

Components	Weight range from smallest to largest size (lb)
Cemented CR femur	0.36 - 0.72
Cemented PS femur	0.43 - 0.87
Cementless CR femur	0.41 - 0.81
Cementless PS femur	0.49 - 0.92
CR tibial insert	0.03 - 0.15
CS tibial insert	0.03 - 0.18
PS tibial insert	0.04 - 0.19
Cruciform baseplate	0.16 - 0.29
Tritanium baseplate	0.13 - 0.18
All-poly patella	0.01 - 0.02
Tritanium patella	0.01 - 0.02

A surgeon must always rely on his or her own professional clinical judgment when deciding whether to use a particular product when treating a particular patient. Stryker does not dispense medical advice and recommends that surgeons be trained in the use of any particular product before using it in surgery.

The information presented is intended to demonstrate the breadth of Stryker's product offerings. A surgeon must always refer to the package insert, product label and/or instructions for use before using any of Stryker's products. Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. Please contact your sales representative if you have questions about the availability of products in your area.

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