

U2 PF+™ Knee

Total Knee System



U2 PF+™ Knee System –

The U2 PF+ Knee System is a comprehensive, advanced Press-fit Total Knee Replacement (TKR) system designed to meet the needs of patients, surgeons, hospital and surgery centers globally.

The system offers a three-dimensional coating designed for optimal pore size and porosity, a conforming femoral shape in 13 sizes with 2 mm A/P and M/L sizing increments, a unique box design and a consistent intercondylar box width, a full range of tibial articulating surface and multiple material options, and a modern tibial baseplate design for initial fixation and stability.

Based on proven implant design philosophies, the surgical technique includes advanced surgical technologies for reproducible clinical outcomes and a streamlined procedure.

Since the launch of the U2 Cemented Knee system in 2005, hundreds of thousands of cases have been performed in over 40 countries around the world. The U2 Knee has demonstrated excellence in long-term clinical outcomes, with a survival rate of over 97% at minimum 10-year follow-up^[1].

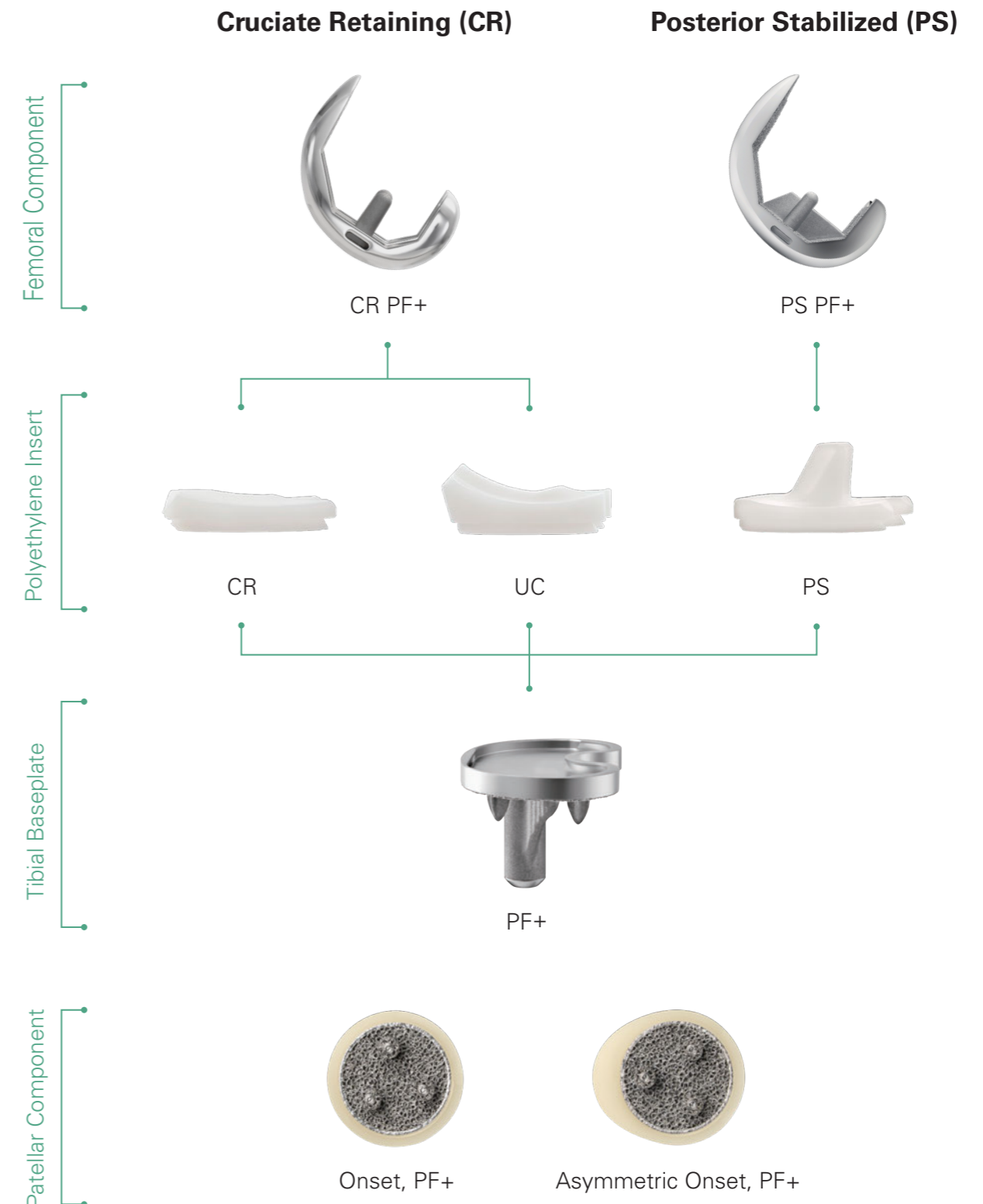
United strives to create a more efficient and precise experience for utilization with orthopedic implants and instruments that are designed to relieve pain and improve knee function in patients.



^[1]Chen IH, Yu TC, Liao JJ. An exploration of U2 total knee system at minimum ten-year follow-up. 21st EFORT Annual Congress. 2020.

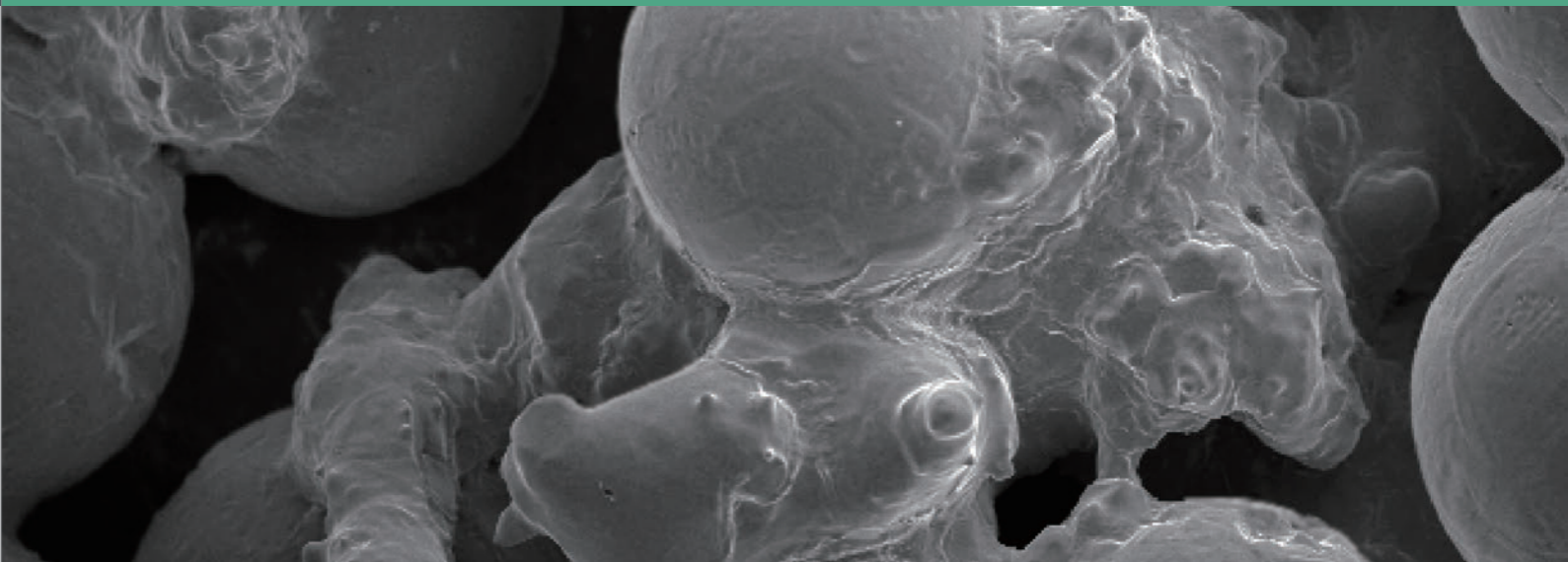
U2 PF+™ Knee System

The U2 PF+ Knee System includes a wide range of product options for demand-matching to optimize solutions based on patients' need.



U2 PF+™ Knee

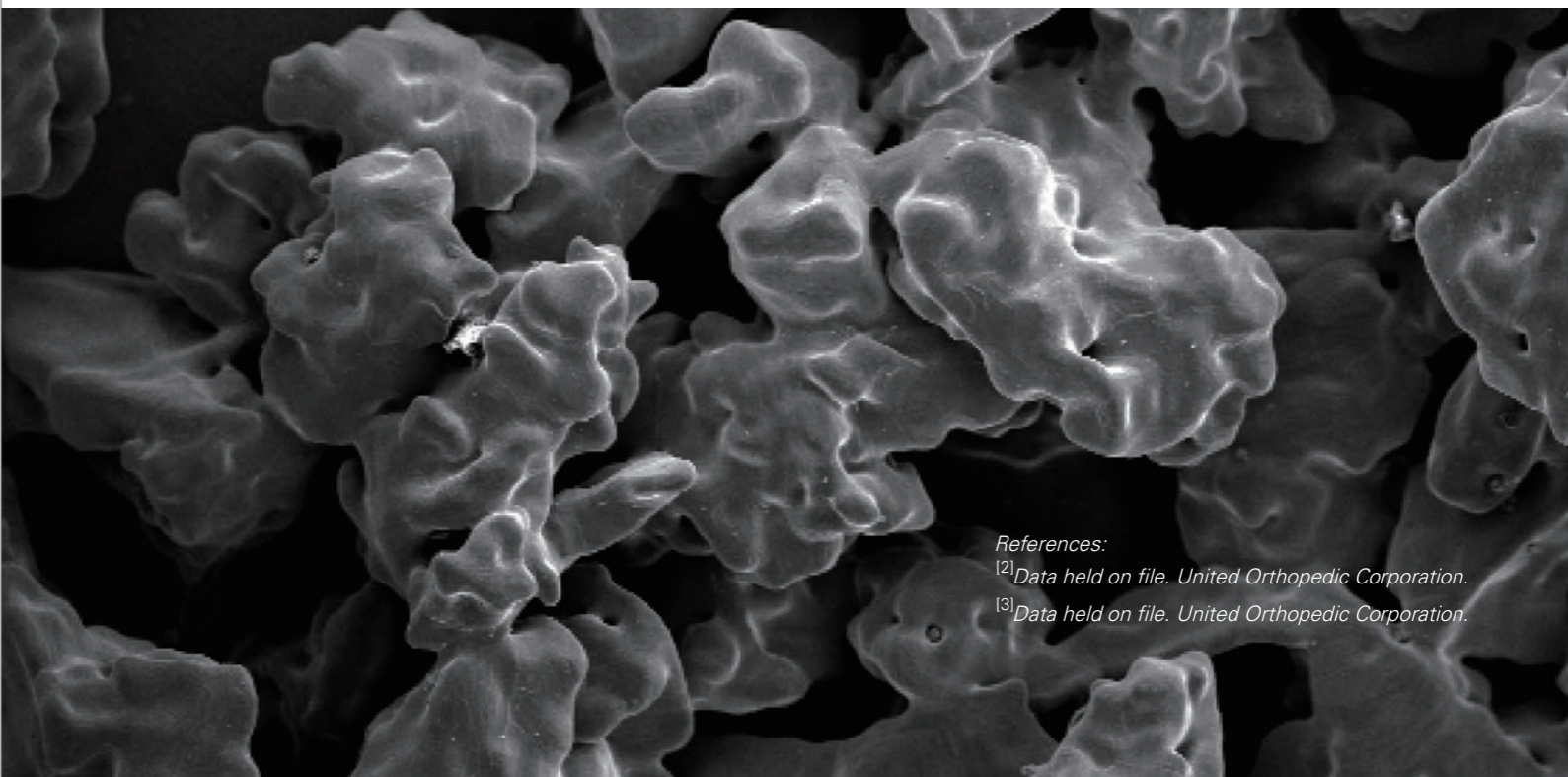
- PRECISE FIT • STABILITY • EFFICIENCY



UNITED Asymmetric Sintering Coating Technology

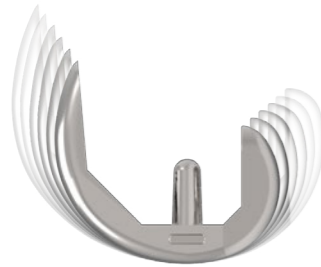
UNITED Asymmetric Sintering Coating (ASC) Technology creates a unique three-dimensional structural lattice of irregularly shaped shards, which can increase the average pore size and porosity more than traditional spherical beads. The irregularly shaped interconnecting pores maximize coverage on bone contacting surfaces to promote optimal bone growth and fixation to the implant. ASC Technology is available with U2 PF+ Knee System to provide an excellent balance between material strength, pore sizes, and porosity for a reproducible press-fit fixation in total knee arthroplasty.

	Pore Size	Porosity	Coefficient of Friction	Porous Structure
PF+ Femur ^[2]	430 µm	85 % (Surface) 56 % (Average)	0.99	CoCr irregular shards
PF+ Tibia ^[3]	246 µm	84 % (Surface) 64 % (Average)	0.95	Titanium irregular shards

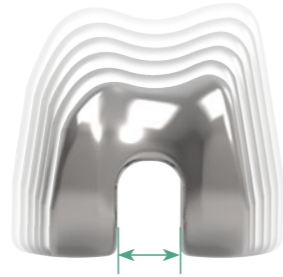


References:
^[2]Data held on file. United Orthopedic Corporation.
^[3]Data held on file. United Orthopedic Corporation.

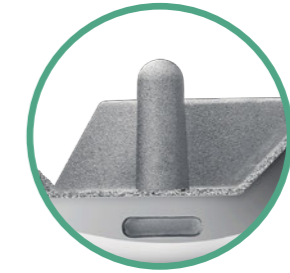
The PS (posterior stabilized) and CR (curciate retaining) femoral components have the same design features, including 2 mm A/P and M/L increments, and consistent intercondylar width.



Consistent condylar curvature and intercondylar box width allow full size interchangeability between femoral and tibial components.

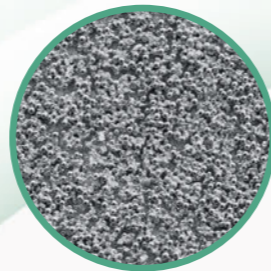
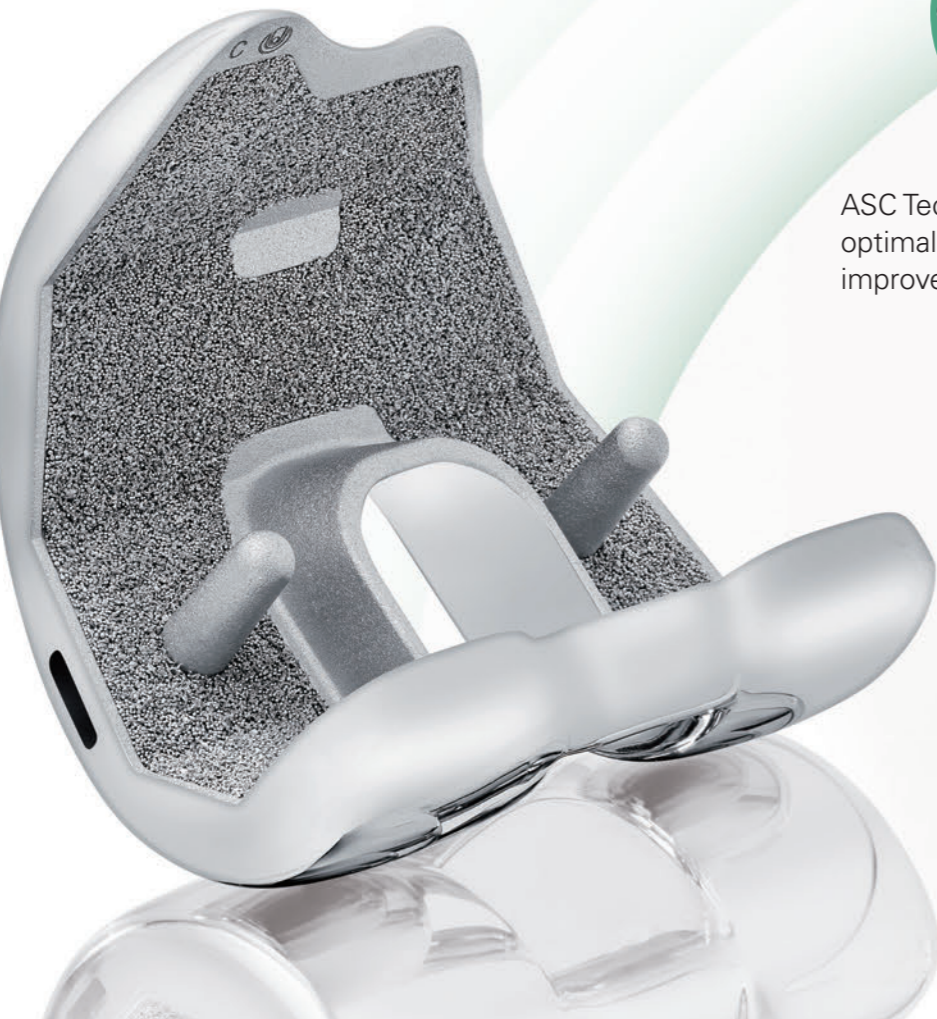


The extended patellar groove (in PS knee) is designed with increased contact area between the patellar and femoral implants to allow for optimal patellar tracking.



Pegs on PS and CR femoral components help guide the position precisely.

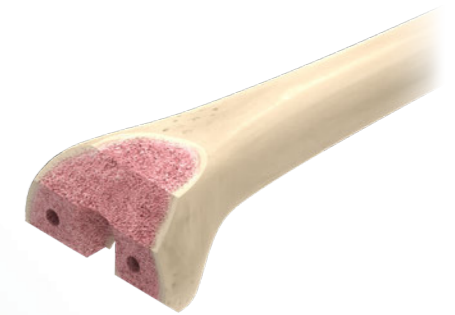
PS and CR femoral components are offered in 2 mm A/P and M/L increments to provide a more refined femoral sizing solution.



ASC Technology is designed with optimal pore size and porosity to improve biological fixation.



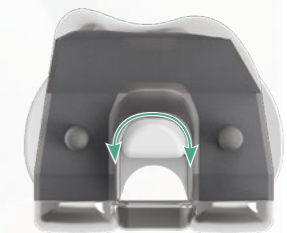
The consistent design philosophy allows a platform-based approach to provide surgeons flexibility for a wide range of procedures.



Smaller intercondylar bone removal together with rounded corners help avoid the risk of intercondylar fracture due to inadequate PS box preparation.



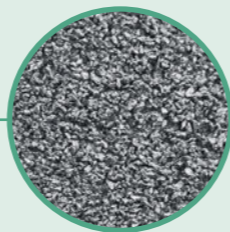
Includes a wide range of product options for demand-matching to optimize solutions based on patients' need.



The curved anterior insert post and anterior femoral cam of PS femoral component are designed to reduce potential for impingement, component failure and polyethylene wear.

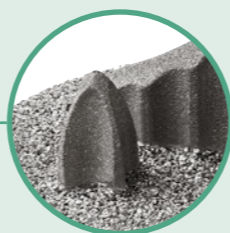
ASC Technology

Designed with optimal pore size and porosity to improve biological fixation.



Cruciform Pegs

Cruciform pegs are designed to provide initial fixation and stability.



Wavy Keel

The wavy keel design enhances 36% bone contact area compared to the cemented keel design and the bladed design helps to improve implantation efficiency.

Bullet Tip Stem

To ensure an overall stable primary fixation, the product offers optional 20 mm and 35 mm bullet tip stems.



U2 PF+ baseplate can accommodate with CR, PS, UC inserts.

- CR and PS inserts are designed with 5 degrees of sagittal tibial slope built into the articulating surface to allow for a zero degree posterior slope, i.e. a tibial resection which is simply perpendicular to the tibial shaft axis.
- Ultra-Congruent (UC) inserts are compatible with the standard CR femoral components and are designed to facilitate a PCL sacrificing surgical technique for bone preservation vs. a standard PS technique and potential for a more streamlined surgical procedure. The articulating surface has an elevated anterior lip surface vs. standard CR systems up to 14.5 mm thick and a more conforming articulating surface to provide enhanced joint stability.
- All CR, PS, and UC inserts are available in UHMWPE (Ultra-High Molecular Weight Polyethylene), XPE (Highly Cross-linked Polyethylene), and E-XPE (Vitamin E Highly Cross-linked Polyethylene).



CR



PS

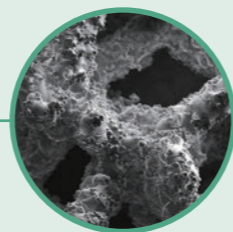


UC



3D-printed Porous Structure

- Designed to promote osseointegration
- The solid titanium core to strengthen the base of the porous pegs and the undersurface



Direct Compression Molding (DCM) Technique

Reinforced polymer-metallic bonding strength

Vitamin E Highly Cross-linked Polyethylene

Improved antioxidative properties and wear resistance

Symmetric & Asymmetric Articulation Design

Biomimicking design in consideration of anatomical fit and biomechanical performance

PF+ Cementless Patellar Component

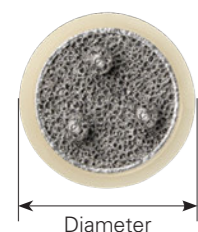
The PF+ Patellar Component integrates two advanced technologies—3D printed porous metal and Direct Compression Molding (DCM)—to achieve optimal long-term fixation and stability. Its 3D printed porous metal backing features a structure engineered to mimic cancellous bone, providing an ideal environment for osseointegration.

Through the DCM process, Vitamin E Highly Cross-linked Polyethylene is fused directly into this structure, ensuring deep infiltration into the metallic pores to creating a monolithic component that minimize the risk of polyethylene dissociation.

	Pore Size (µm)	Porosity (%)	Thickness (µm)	Porous Structure
PF+ Patella ^[4]	527 (undersurface) 436 (peg)	64 (undersurface) 62 (peg)	163 (undersurface) 175 (peg)	Titanium powder

^[4]UOC-RD-TR-23052. Data held on file. United Orthopedic Corporation.

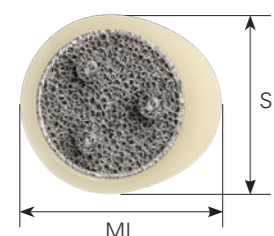
PF+ Patellar Component Specifications



Onset Patellar Component, PF+

Size	S	M	L	XL	XXL
Thickness	9	10	10	11	11
Diameter	29	32	35	38	41

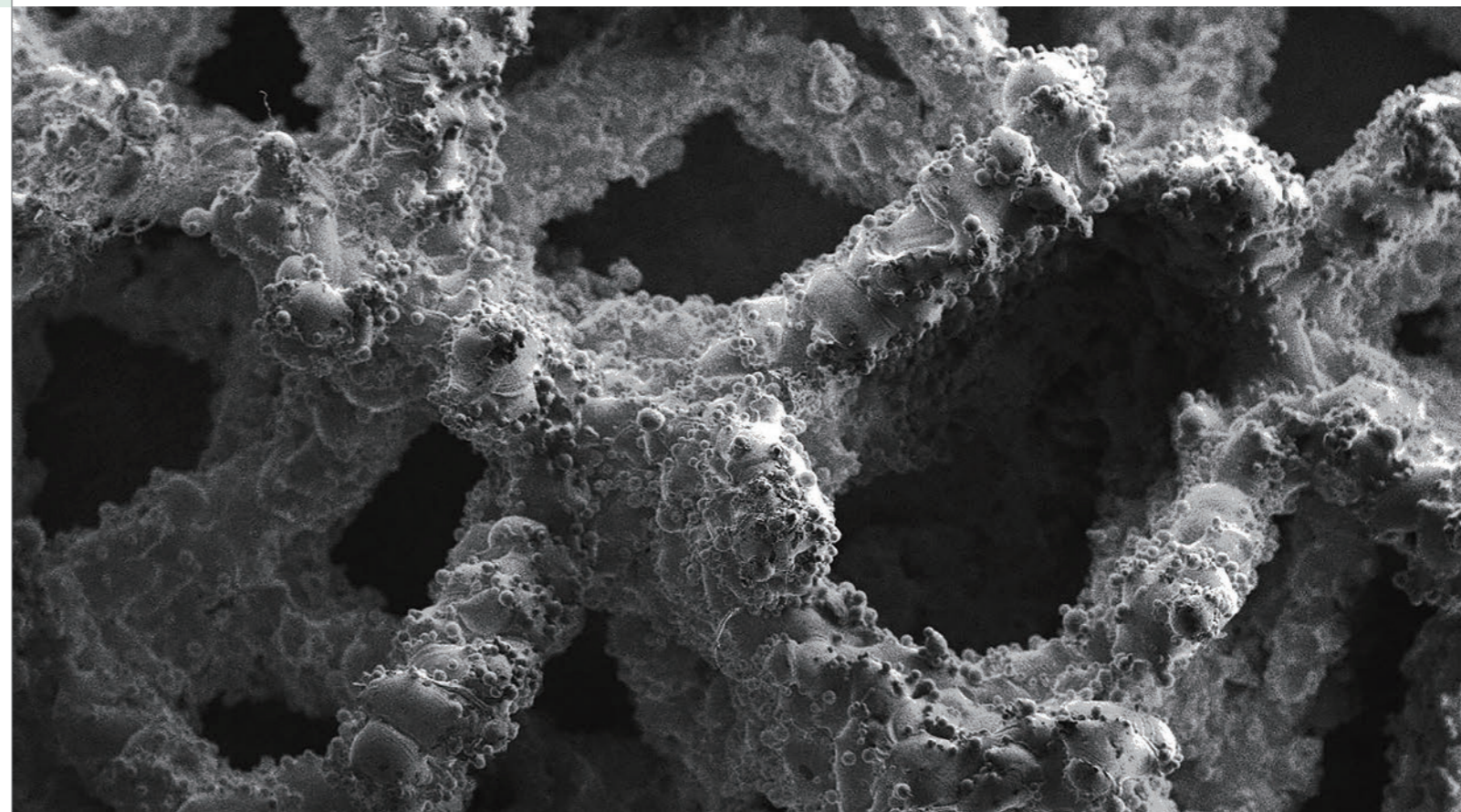
Unit: mm



Asymmetric Onset Patellar Component, PF+

Size	S	M	L	XL	XXL
Thickness	9	10	10	11	11
SI	29	32	35	38	41
ML	33	36	39	42	44

Unit: mm



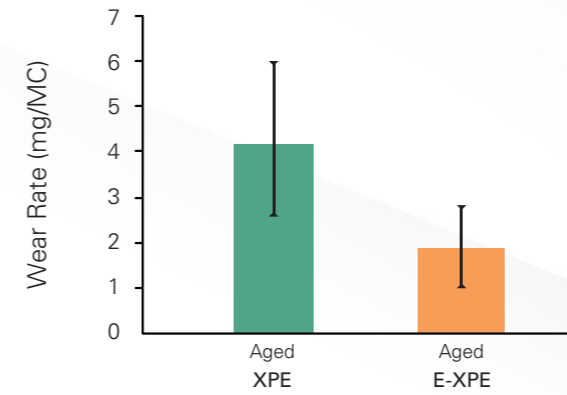
E-XPE

Vitamin E Highly Cross-linked Polyethylene



Advanced Bearing Technology

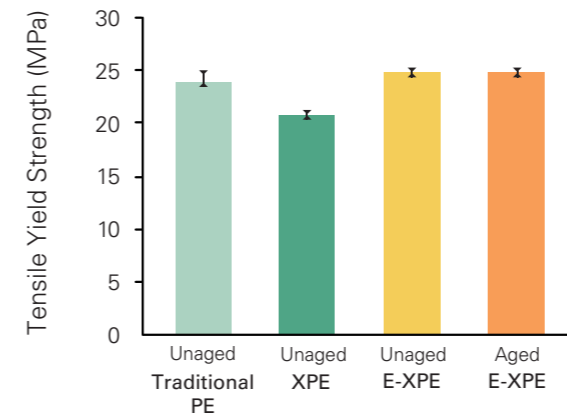
Wear Performance



Extraordinary Anti-Wear Performance

E-XPE insert shows a 60% reduction in gravimetric wear compared to XPE after accelerated aging^[5].

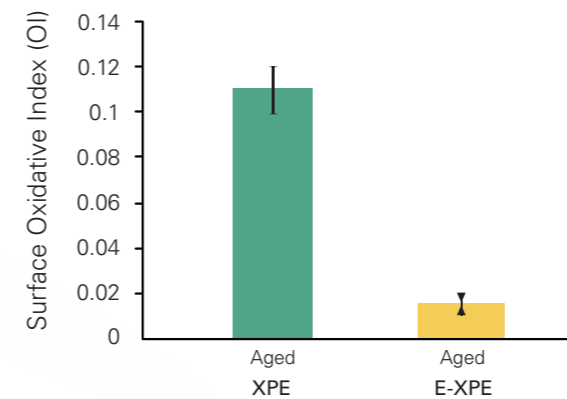
Mechanical Strength



Enhanced Mechanical Strength

Heat treatment is not required after cross-linking process. Therefore, E-XPE shows a 20% tensile strength improvement as compared to highly cross-linked polyethylene^[5].

Oxidative Stability



Superior Oxidative Stability

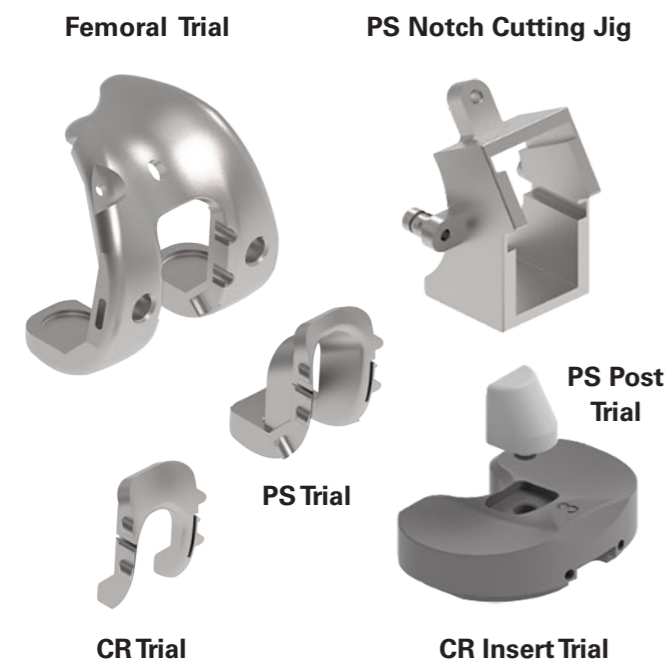
Surface oxidative index of E-XPE shows significant low oxidation after in vitro accelerated aging test^[5].

^[5] Data held on file. United Orthopedic Corporation.

When Efficiency Matters

Designed with precision, simplicity, and reproducibility in mind

U2 PF+ modular and universal instruments and tray layouts facilitate time savings



Streamlined Femoral Preparation

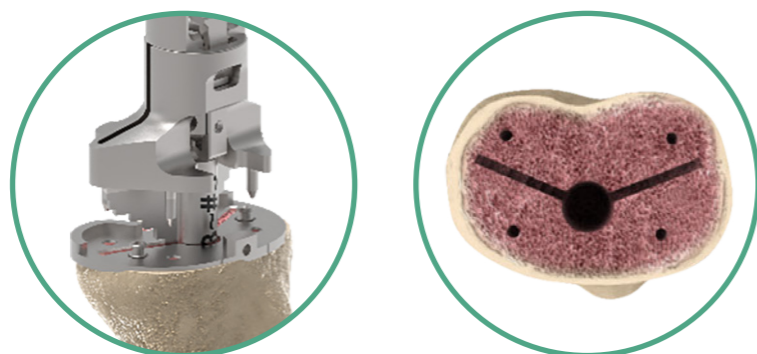
- Modular femoral trials allow for a simple conversion from CR to PS.
- PS notch preparation with cut-through modular femoral trials.

Modular Insert Trials

- PS post trials enable simple transformation of a CR insert trial into a PS insert trial.

Optimized Tibial Workflow

- Modern tibial instruments were designed for accuracy without compromising bone quality to ensure initial stability and long-term biological fixation of the tibial baseplate.

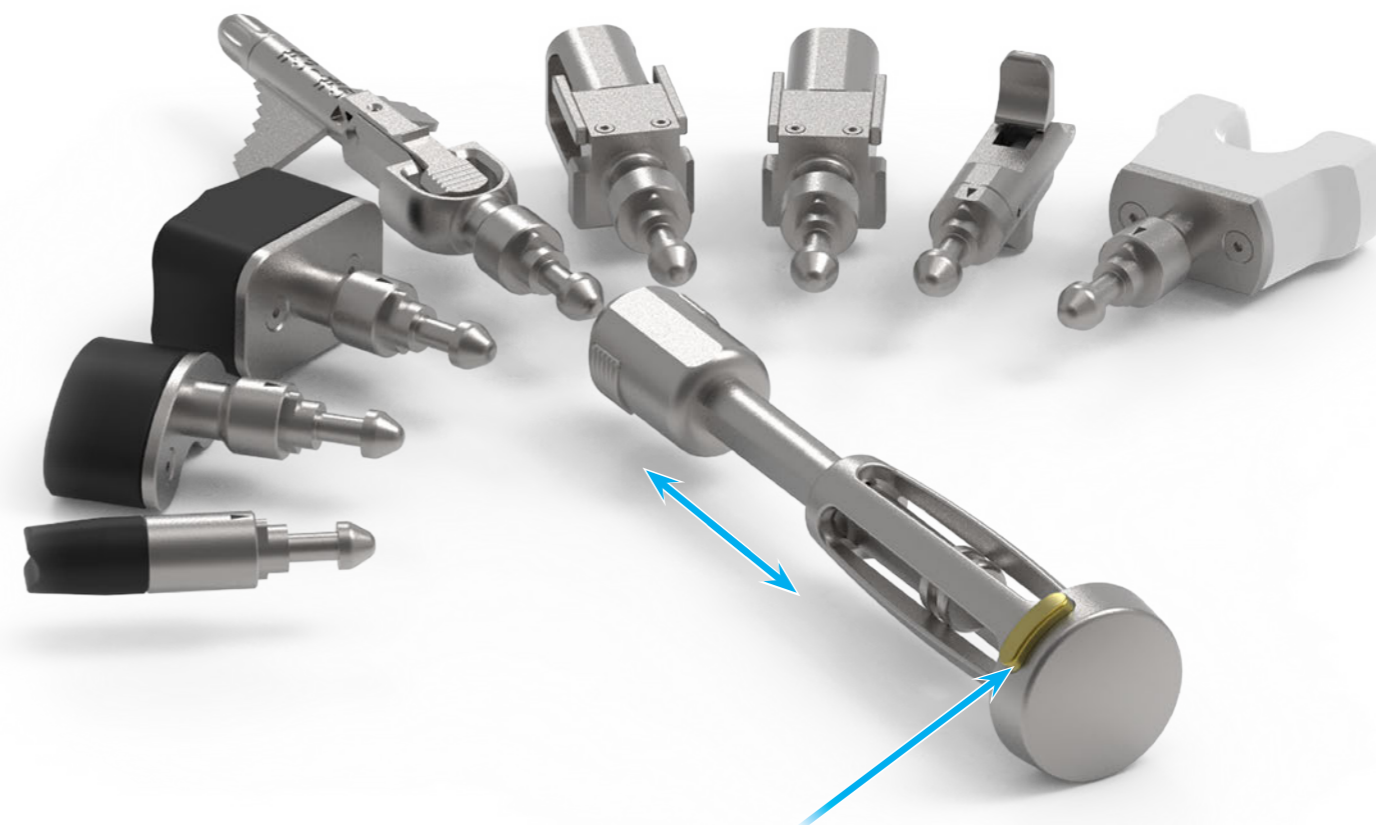


Femoral Driver and Universal Sliding Handle

- Newly designed femoral driver can securely hold the entire range of femoral components and provide complete control during placement and impaction.
- With only one click, the handle can transition into a sliding hammer to extract implants and instruments.



Femoral Driver



Press the gold button to release the built-in sliding hammer

Universal Sliding Handle

Special Order Items

Order Information

Femoral Component Options

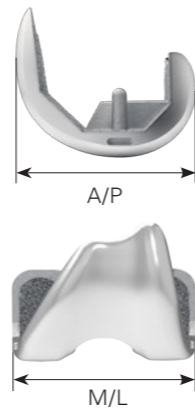
All components listed are CoCrMo alloy



CR



PS



	PF+	
	Left	Right
#1	2103-1510	2103-1610
#1.5	2103-1515	2103-1615
#2	2103-1520	2103-1620
#2.5	2103-1525	2103-1625
#3	2103-1530	2103-1630
#3.5	2103-1535	2103-1635
#4	2103-1540	2103-1640
#4.5	2103-1545	2103-1645
#5	2103-1550	2103-1650
#5.5	2103-1555	2103-1555
#6	2103-1560	2103-1660
#6.5	2103-1565	2103-1665
#7	2103-1570	2103-1670

	PF+	
	Left	Right
#1	2103-3510	2103-3610
#1.5	2103-3515	2103-3615
#2	2103-3520	2103-3620
#2.5	2103-3525	2103-3625
#3	2103-3530	2103-3630
#3.5	2103-3535	2103-3635
#4	2103-3540	2103-3640
#4.5	2103-3545	2103-3645
#5	2103-3550	2103-3650
#5.5	2103-3555	2103-3655
#6	2103-3560	2103-3660
#6.5	2103-3565	2103-3665
#7	2103-3570	2103-3670

	A/P	M/L
#1	52	56
#1.5	54	58
#2	56	60
#2.5	58	62
#3	60	64
#3.5	62	66
#4	64	68
#4.5	66	70
#5	68	72
#5.5	70	74
#6	72	76
#6.5	74	78
#7	76	80

Unit: mm

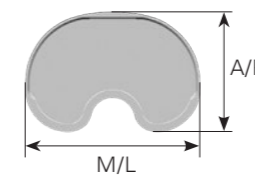
*CoCrMo is an abbreviation for cobalt chromium molybdenum.

Special Order Items

Order Information

Tibial Baseplate Options

All components listed are Titanium (Ti-6Al-4V) Alloy




	PF+
#1	2203-3610
#2	2203-3620
#3	2203-3630
#4	2203-3640
#5	2203-3650
#6	2203-3660
#7	2203-3670

	A/P	M/L
#1	42	63
#2	44.5	66
#3	47	69
#4	49.5	72
#5	52.5	76
#6	55.5	80
#7	58.5	84

Unit: mm

*Ti-6Al-4V is an abbreviation for Titanium-6 Aluminum-4 Vanadium.

 Special Order Items

Order Information

CR Tibial Insert Options



CR		#1	#2	#3	#4	#5	#6	#7
UHMWPE	9 mm	2303-1211	2303-1221	2303-1231	2303-1241	2303-1251	2303-1261	2303-1271
	10 mm	2303-1216	2303-1226	2303-1236	2303-1246	2303-1256	2303-1266	2303-1276
	11 mm	2303-1212	2303-1222	2303-1232	2303-1242	2303-1252	2303-1262	2303-1272
	12 mm	2303-1217	2303-1227	2303-1237	2303-1247	2303-1257	2303-1267	2303-1277
	13 mm	2303-1213	2303-1223	2303-1233	2303-1243	2303-1253	2303-1263	2303-1273
	14 mm	2303-1218	2303-1228	2303-1238	2303-1248	2303-1258	2303-1268	2303-1278
	15 mm	2303-1214	2303-1224	2303-1234	2303-1244	2303-1254	2303-1264	2303-1274
	16 mm	2303-1219	2303-1229	2303-1239	2303-1249	2303-1259	2303-1269	2303-1279
	17 mm	2303-1210	2303-1220	2303-1230	2303-1240	2303-1250	2303-1260	2303-1270
18 mm	2303-1215	2303-1225	2303-1235	2303-1245	2303-1255	2303-1265	2303-1275	

XCR		#1	#2	#3	#4	#5	#6	#7
XPE	9 mm	2303-1611	2303-1621	2303-1631	2303-1641	2303-1651	2303-1661	2303-1671
	10 mm	2303-1616	2303-1626	2303-1636	2303-1646	2303-1656	2303-1666	2303-1676
	11 mm	2303-1612	2303-1622	2303-1632	2303-1642	2303-1652	2303-1662	2303-1672
	12 mm	2303-1617	2303-1627	2303-1637	2303-1647	2303-1657	2303-1667	2303-1677
	13 mm	2303-1613	2303-1623	2303-1633	2303-1643	2303-1653	2303-1663	2303-1673
	14 mm	2303-1618	2303-1628	2303-1638	2303-1648	2303-1658	2303-1668	2303-1678
	15 mm	2303-1614	2303-1624	2303-1634	2303-1644	2303-1654	2303-1664	2303-1674
	16 mm	2303-1619	2303-1629	2303-1639	2303-1649	2303-1659	2303-1669	2303-1679
	17 mm	2303-1610	2303-1620	2303-1630	2303-1640	2303-1650	2303-1660	2303-1670
18 mm	2303-1615	2303-1625	2303-1635	2303-1645	2303-1655	2303-1665	2303-1675	



E-XCR		#1	#2	#3	#4	#5	#6	#7
E-XPE	9 mm	2303-1811	2303-1821	2303-1831	2303-1841	2303-1851	2303-1861	2303-1871
	10 mm	2303-1816	2303-1826	2303-1836	2303-1846	2303-1856	2303-1866	2303-1876
	11 mm	2303-1812	2303-1822	2303-1832	2303-1842	2303-1852	2303-1862	2303-1872
	12 mm	2303-1817	2303-1827	2303-1837	2303-1847	2303-1857	2303-1867	2303-1877
	13 mm	2303-1813	2303-1823	2303-1833	2303-1843	2303-1853	2303-1863	2303-1873
	14 mm	2303-1818	2303-1828	2303-1838	2303-1848	2303-1858	2303-1868	2303-1878
	15 mm	2303-1814	2303-1824	2303-1834	2303-1844	2303-1854	2303-1864	2303-1874
	16 mm	2303-1819	2303-1829	2303-1839	2303-1849	2303-1859	2303-1869	2303-1879
	17 mm	2303-1810	2303-1820	2303-1830	2303-1840	2303-1850	2303-1860	2303-1870
18 mm	2303-1815	2303-1825	2303-1835	2303-1845	2303-1855	2303-1865	2303-1875	

*UHMWPE is an abbreviation for ultra-high molecular weight polyethylene.
 *XPE is an abbreviation for highly crosslinked polyethylene.
 *E-XPE is an abbreviation for vitamin E highly crosslinked polyethylene.

 Special Order Items

Order Information

UC Tibial Insert Options



XUC		#1	#2	#3	#4	#5	#6	#7
XPE	9 mm	2303-1411	2303-1421	2303-1431	2303-1441	2303-1451	2303-1461	2303-1471
	10 mm	2303-1416	2303-1426	2303-1436	2303-1446	2303-1456	2303-1466	2303-1476
	11 mm	2303-1412	2303-1422	2303-1432	2303-1442	2303-1452	2303-1462	2303-1472
	12 mm	2303-1417	2303-1427	2303-1437	2303-1447	2303-1457	2303-1467	2303-1477
	13 mm	2303-1413	2303-1423	2303-1433	2303-1443	2303-1453	2303-1463	2303-1473
	14 mm	2303-1418	2303-1428	2303-1438	2303-1448	2303-1458	2303-1468	2303-1478
	15 mm	2303-1414	2303-1424	2303-1434	2303-1444	2303-1454	2303-1464	2303-1474
	16 mm	2303-1419	2303-1429	2303-1439	2303-1449	2303-1459	2303-1469	2303-1479
	17 mm	2303-1410	2303-1420	2303-1430	2303-1440	2303-1450	2303-1460	2303-1470
18 mm	2303-1415	2303-1425	2303-1435	2303-1445	2303-1455	2303-1465	2303-1475	



E-XUC		#1	#2	#3	#4	#5	#6	#7
E-XPE	9 mm	2303-1711	2303-1721	2303-1731	2303-1741	2303-1751	2303-1761	2303-1771
	10 mm	2303-1716	2303-1726	2303-1736	2303-1746	2303-1756	2303-1766	2303-1776
	11 mm	2303-1712	2303-1722	2303-1732	2303-1742	2303-1752	2303-1762	2303-1772
	12 mm	2303-1717	2303-1727	2303-1737	2303-1747	2303-1757	2303-1767	2303-1777
	13 mm	2303-1713	2303-1723	2303-1733	2303-1743	2303-1753	2303-1763	2303-1773
	14 mm	2303-1718	2303-1728	2303-1738	2303-1748	2303-1758	2303-1768	2303-1778
	15 mm	2303-1714	2303-1724	2303-1734	2303-1744	2303-1754	2303-1764	2303-1774
	16 mm	2303-1719	2303-1729	2303-1739	2303-1749	2303-1759	2303-1769	2303-1779
	17 mm	2303-1710	2303-1720	2303-1730	2303-1740	2303-1750	2303-1760	2303-1770
18 mm	2303-1715	2303-1725	2303-1735	2303-1745	2303-1755	2303-1765	2303-1775	

Special Order Items

Order Information

PS Tibial Insert Options



PS		#1	#2	#3	#4	#5	#6	#7
UHMWPE	9 mm	2303-3011	2303-3021	2303-3031	2303-3041	2303-3051	2303-3061	2303-3071
	10 mm	2303-3016	2303-3026	2303-3036	2303-3046	2303-3056	2303-3066	2303-3076
	11 mm	2303-3012	2303-3022	2303-3032	2303-3042	2303-3052	2303-3062	2303-3072
	12 mm	2303-3017	2303-3027	2303-3037	2303-3047	2303-3057	2303-3067	2303-3077
	13 mm	2303-3013	2303-3023	2303-3033	2303-3043	2303-3053	2303-3063	2303-3073
	14 mm	2303-3018	2303-3028	2303-3038	2303-3048	2303-3058	2303-3068	2303-3078
	15 mm	2303-3014	2303-3024	2303-3034	2303-3044	2303-3054	2303-3064	2303-3074
	16 mm	2303-3019	2303-3029	2303-3039	2303-3049	2303-3059	2303-3069	2303-3079
	17 mm	2303-3010	2303-3020	2303-3030	2303-3040	2303-3050	2303-3060	2303-3070
18 mm	2303-3015	2303-3025	2303-3035	2303-3045	2303-3055	2303-3065	2303-3075	

XPS		#1	#2	#3	#4	#5	#6	#7
XPE	9 mm	2303-3611	2303-3621	2303-3631	2303-3641	2303-3651	2303-3661	2303-3671
	10 mm	2303-3616	2303-3626	2303-3636	2303-3646	2303-3656	2303-3666	2303-3676
	11 mm	2303-3612	2303-3622	2303-3632	2303-3642	2303-3652	2303-3662	2303-3672
	12 mm	2303-3617	2303-3627	2303-3637	2303-3647	2303-3657	2303-3667	2303-3677
	13 mm	2303-3613	2303-3623	2303-3633	2303-3643	2303-3653	2303-3663	2303-3673
	14 mm	2303-3618	2303-3628	2303-3638	2303-3648	2303-3658	2303-3668	2303-3678
	15 mm	2303-3614	2303-3624	2303-3634	2303-3644	2303-3654	2303-3664	2303-3674
	16 mm	2303-3619	2303-3629	2303-3639	2303-3649	2303-3659	2303-3669	2303-3679
	17 mm	2303-3610	2303-3620	2303-3630	2303-3640	2303-3650	2303-3660	2303-3670
18 mm	2303-3615	2303-3625	2303-3635	2303-3645	2303-3655	2303-3665	2303-3675	



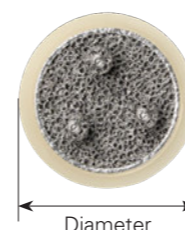
E-XPS		#1	#2	#3	#4	#5	#6	#7
E-XPE	9 mm	2303-3811	2303-3821	2303-3831	2303-3841	2303-3851	2303-3861	2303-3871
	10 mm	2303-3816	2303-3826	2303-3836	2303-3846	2303-3856	2303-3866	2303-3876
	11 mm	2303-3812	2303-3822	2303-3832	2303-3842	2303-3852	2303-3862	2303-3872
	12 mm	2303-3817	2303-3827	2303-3837	2303-3847	2303-3857	2303-3867	2303-3877
	13 mm	2303-3813	2303-3823	2303-3833	2303-3843	2303-3853	2303-3863	2303-3873
	14 mm	2303-3818	2303-3828	2303-3838	2303-3848	2303-3858	2303-3868	2303-3878
	15 mm	2303-3814	2303-3824	2303-3834	2303-3844	2303-3854	2303-3864	2303-3874
	16 mm	2303-3819	2303-3829	2303-3839	2303-3849	2303-3859	2303-3869	2303-3879
	17 mm	2303-3810	2303-3820	2303-3830	2303-3840	2303-3850	2303-3860	2303-3870
18 mm	2303-3815	2303-3825	2303-3835	2303-3845	2303-3855	2303-3865	2303-3875	

Special Order Items

Order Information

Parellar Component Options

Made with a Titanium (Ti-6Al-4V) Alloy backing and EXPE surface.

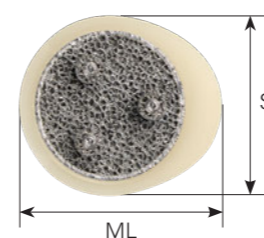


Onset Patellar Component, PF+

Size	S	M	L	XL	XXL
E-XPE	2403 - 5420	2403 - 5430	2403 - 5440	2403 - 5450	2403 - 5460

Thickness	9	10	10	11	11
Diameter	29	32	35	38	41

Unit: mm



Asymmetric Onset Patellar Component, PF+

Size	S	M	L	XL	XXL
E-XPE	2403 - 5620	2403 - 5630	2403 - 5640	2403 - 5650	2403 - 5660

Thickness	9	10	10	11	11
SI	29	32	35	38	41
ML	33	36	39	42	44

Unit: mm

Special Order Items

Order Information

Tibial Baseplate Stem Extension Options

Made with Titanium (Ti-6Al-4V) Alloy



Straight Stem

Ø12.5 x 20 mm	Ø12.5 x 35 mm
2703-7112	2703-7212

Reference

- [1] Chen IH, Yu TC, Liao JJ. An exploration of U2 total knee system at minimum ten-year follow-up. 21st EFORT Annual Congress. 2020.
- [2] Data held on file. United Orthopedic Corporation
- [3] Data held on file. United Orthopedic Corporation
- [4] UOC-RD-TR-23052. Data held on file. United Orthopedic Corporation
- [5] Data held on file. United Orthopedic Corporation

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