

seleXys[®] PC
Product information



seleXys® PC

Uncemented modular pressfit cup

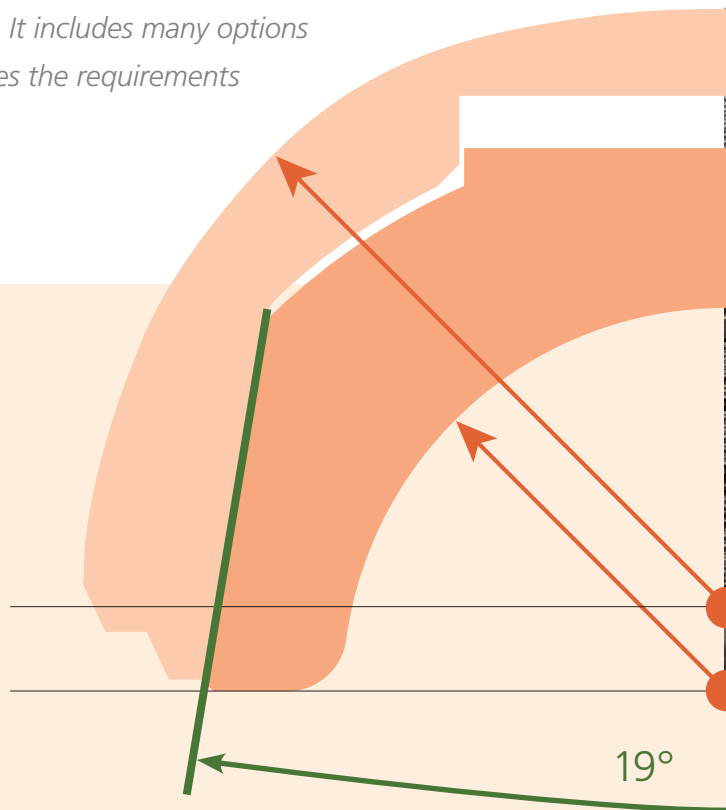
Today the majority of prosthetic acetabular reconstructions are performed using modular uncemented pressfit components. Various tribological options, inlay interchangeability and supplementary screw fixation are the main requirements for maximum intraoperative flexibility.

The seleXys PC cup is an uncemented modular pressfit acetabular system that is optimised for ceramic-on-ceramic articulation. It includes many options to treat a variety of diseased hip joints and addresses the requirements for modularity.

Design

The basic shape of the outer shell is elliptical with a 2 mm oversizing included at the equator and a flattened pole area. This type of design ensures load transmission near the rim of the cup, similar to the peripheral load transfer in the natural hip joint, which takes place in the equatorial region of the acetabulum. The oversizing of the cup equator creates a primary pressfit fixation of the implant in the acetabulum.

This reduces relative micromotion at the implant-bone interface and provides the physiological conditions that are necessary for osseointegration around the implant. The flattened pole supports the pressfit effect and prevents the cup from bottoming out on the acetabular floor.

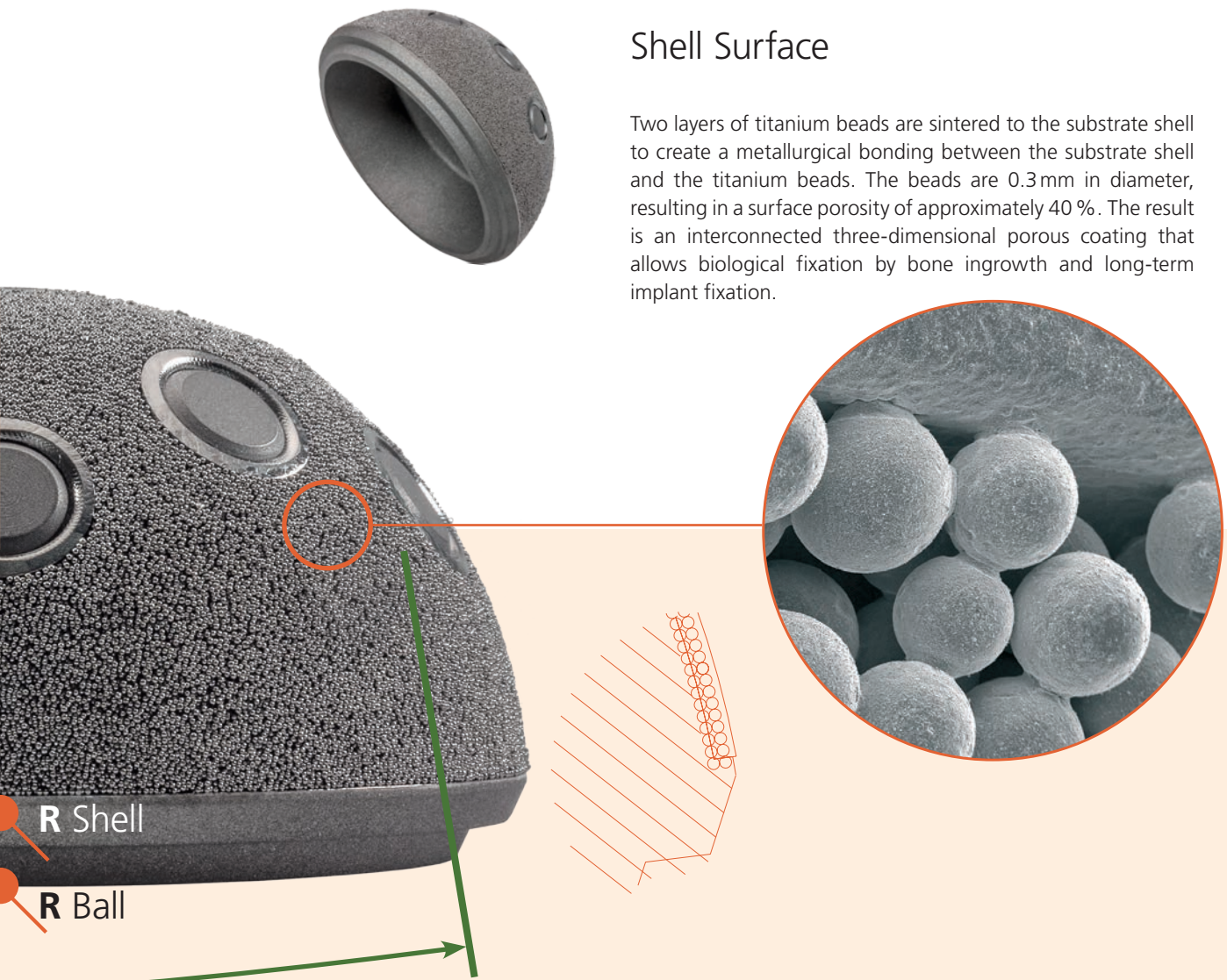


Supplementary screw fixation can be used to increase primary stability. Depending on the shell size, 3 to 5 screw holes are available. The screw holes are closed with preassembled plugs that can be removed if needed. Angulation of the 5.7 mm cancellous bone screws is possible within a range of +/- 20°.



Shell Surface

Two layers of titanium beads are sintered to the substrate shell to create a metallurgical bonding between the substrate shell and the titanium beads. The beads are 0.3mm in diameter, resulting in a surface porosity of approximately 40%. The result is an interconnected three-dimensional porous coating that allows biological fixation by bone ingrowth and long-term implant fixation.



Joint Stability

Secondary stability, which is the base for long-term implant fixation, occurs by bone ingrowth into the porous surface of the implant.

The centre of rotation is located at the level of the entrance plane of the inlay. Compared to the hemisphere of the shell it is translated by 2.5–3mm with no influence on head coverage.

The seleXys PC shell is designed to provide a safe metal back that, under normal circumstances, does not deform during impact. The conical inner surface of the shell is roughened for secure inlay fixation. The 19° tapered inner surface in combination with the length of the fixation taper helps to centre the inlay and reduce the risk of canting. Especially when using ceramic inlays, the risk of rim chipping and postoperative fracture of the inlay will be minimized. Anchorage of the inlays is achieved by a conical taper fixation.

Elevated rim inlays and articulation diameters up to 36mm can be used to increase joint stability and reduce the risk of dislocation.



Bearing materials

ceramys® – a pearl of ceramics

ceramys – a nanocrystalline dispersion ceramic material – is made of a homogeneous composition of 80 % yttriumoxide stabilized zirconia and 20 % alumina oxide. With its mechanical properties, ceramys offers a high fracture resistance and reduces the risk of inlay chipping, postoperative fracture and surface roughening in case of recurrent subluxation. ceramys is highly resistant to ageing and shows very low wear rates for both, ceramic-on-ceramic and ceramic-on-polyethylene articulation.



vitamys® – the E-factor makes the difference

vitamys – a highly cross-linked polyethylene stabilised with vitamin E – is characterized by highest resistance against oxidation, ageing and wear. Although highly cross-linked, the mechanical properties of conventional UHMWPE are maintained to a large extent, while wear rates in-vitro were reduced by 80 % after 5 million cycles compared to conventional UHMWPE.



UHMWPE

UHMWPE has been used widely in total hip arthroplasty for more than 50 years. Continuous improvement, such as excluding oxygen from the packaging process, led to a reliable bearing surface for articulation especially in combination with ceramic femoral heads.



Wear rates

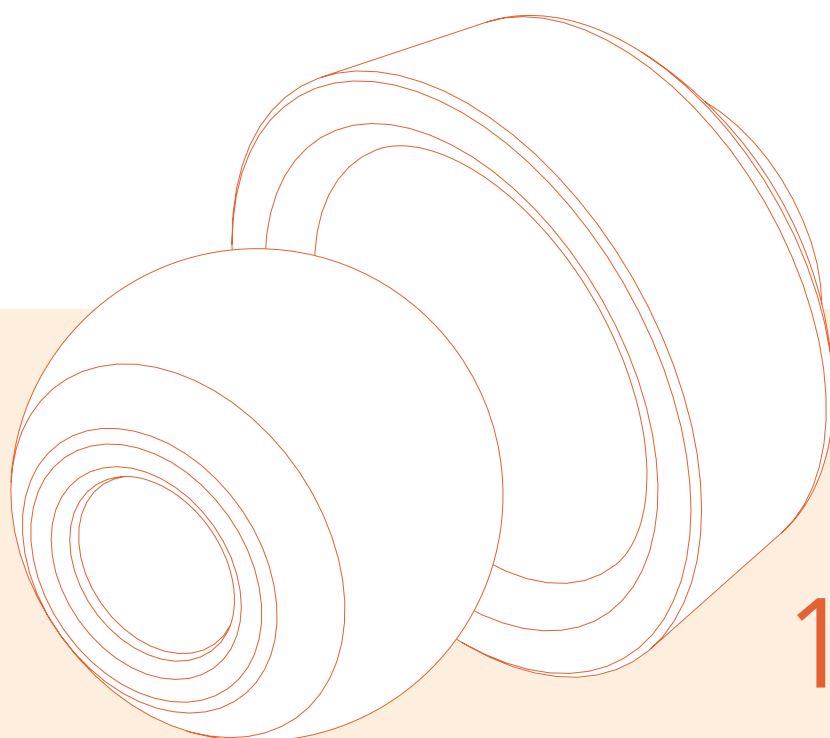
0.002 mm³/mio cycles
ceramys / ceramys¹

6 mm³/mio cycles
Bionit2 / vitamys (HXLPE)¹

6 mm³/mio cycles
CoCr / vitamys (HXLPE)¹

14 mm³/mio cycles
ceramys / UHMWPE¹

31 mm³/mio cycles
CoCr / UHMWPE¹



ceramys / ceramys¹

Bionit2 / vitamys (HXLPE)¹

CoCr / vitamys (HXLPE)¹

ceramys / UHMWPE¹

CoCr / UHMWPE¹

¹ Internal test report

Implants



seleXys PC Shell

Item no.	Shell size	Number of screw holes
55.41.0042	42 mm	3
55.41.0044	44 mm	3
55.41.0046	46 mm	3
55.41.0048	48 mm	3
55.41.0050	50 mm	5
55.41.0052	52 mm	5
55.41.0054	54 mm	5
55.41.0056	56 mm	5
55.41.0058	58 mm	5
55.41.0060	60 mm	5
55.41.0062	62 mm	5
55.41.0064	64 mm	5

Material: Ti6Al7Nb; TiCP



Cancellous bone screw, sterile

Item no.	Diameter	Length
101.05.57.15.0	5.7 mm	15 mm
101.05.57.20.0	5.7 mm	20 mm
101.05.57.25.0	5.7 mm	25 mm
101.05.57.30.0	5.7 mm	30 mm
101.05.57.35.0	5.7 mm	35 mm
101.05.57.40.0	5.7 mm	40 mm
101.05.57.45.0	5.7 mm	45 mm

Material: Ti6Al7V



seleXys ceramys Inlay*

Item no. 28 mm articulation	Item no. 32 mm articulation	Item no. 36 mm articulation	Shell size	Inlay size
–	–	–	42 mm	AA
55.47.2802	–	–	44 mm	BB
55.47.2803	–	–	46 mm	CC
–	55.47.3204	–	48 mm	DD
–	55.47.3205	–	50 mm	EE
–	55.47.3206	55.47.3606	52 mm	FF
–	–	55.47.3607	54 mm	GG
–	–	55.47.3608	56 mm	HH
–	–	55.47.3609	58 mm	II
–	–	55.47.3610	60 mm	JJ
–	–	55.47.3611	62/64 mm	KK

Material: $ZrO_2 - Al_2O_3$

**Can only be combined with Mathys ceramic heads.*



seleXys vitamys Inlay, standard

Item no. 28 mm articulation	Item no. 32 mm articulation	Item no. 36 mm articulation	Shell size	Inlay size
52.34.0130	–	–	42 mm	AA
52.34.0131	–	–	44 mm	BB
52.34.0132	–	–	46 mm	CC
52.34.0133	52.34.0150	–	48 mm	DD
52.34.0134	52.34.0151	–	50 mm	EE
52.34.0135	52.34.0152	52.34.0165	52 mm	FF
52.34.0136	–	52.34.0166	54 mm	GG
52.34.0137	–	52.34.0167	56 mm	HH
52.34.0138	–	52.34.0168	58 mm	II
–	–	52.34.0169	60 mm	JJ
–	–	52.34.0170	62/64 mm	KK

Material: vitamys (highly cross-linked UHMWPE, stabilized with vitamin E)



seleXys vitamys Inlay, hooded

Item no. 28 mm articulation	Item no. 32 mm articulation	Item no. 36 mm articulation	Shell size	Inlay size
52.34.0240	–	–	42 mm	AA
52.34.0241	–	–	44 mm	BB
52.34.0242	–	–	46 mm	CC
52.34.0243	52.34.0260	–	48 mm	DD
52.34.0244	52.34.0261	–	50 mm	EE
52.34.0245	52.34.0262	52.34.0275	52 mm	FF
52.34.0246	–	52.34.0276	54 mm	GG
52.34.0247	–	52.34.0277	56 mm	HH
52.34.0248	–	52.34.0278	58 mm	II
–	–	52.34.0279	60 mm	JJ
–	–	–	62/64 mm	KK

Material: vitamys (highly cross-linked UHMWPE, stabilized with vitamin E)



seleXys PE Inlay, standard

Item no. 28 mm articulation	Item no. 32 mm articulation	Shell size	Inlay size
55.43.2801	–	42 mm	AA
55.43.2802	–	44 mm	BB
55.43.2803	–	46 mm	CC
55.43.2804	–	48 mm	DD
55.43.2805	55.43.3205	50 mm	EE
55.43.2806	55.43.3206	52 mm	FF
55.43.2807	55.43.3207	54 mm	GG
55.43.2808	55.43.3208	56 mm	HH
55.43.2809	55.43.3209	58 mm	II
55.43.2810	55.43.3210	60 mm	JJ
55.43.2811	55.43.3211	62/64 mm	KK

Material: UHMWPE



seleXys PE Inlay, hooded

Item no. 28 mm articulation	Item no. 32 mm articulation	Shell size	Inlay size
55.44.2801	–	42 mm	AA
55.44.2802	–	44 mm	BB
55.44.2803	–	46 mm	CC
55.44.2804	–	48 mm	DD
55.44.2805	55.44.3205	50 mm	EE
55.44.2806	55.44.3206	52 mm	FF
55.44.2807	55.44.3207	54 mm	GG
55.44.2808	55.44.3208	56 mm	HH
55.44.2809	55.44.3209	58 mm	II
55.44.2810	55.44.3210	60 mm	JJ
55.44.2811	55.44.3211	62/64 mm	KK

Material: UHMWPE

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