LROI Implant Library – Hip

Hip prosthesis

- Femoral component
  - 1 Fixed neck femoral component (fixed head)
  - 2. Fixed neck femoral component (modular head)
  - 12. Resurfacing femoral component
  - 16. Modular neck femoral component + 17. Modular neck
  - 13. Modular hip femoral body + 14. Modular hip femoral stem
  - 15. Modular hip femoral extender
- Acetabular component
  - 10. Acetabular Reinforcement device
  - 4. Non-modular acetabular cup
  - 5. Modular acetabular shell + 6. Modular acetabular liner
- Inlay component
- Head component
  - 3. Femoral head
  - 11. Femoral bipolar component













Femoral component

Prosthesis kind		
1	Fixed neck femoral component (fixed head)	A one-piece femoral stem that includes the femoral neck. Fixed head. 
2	Fixed neck femoral component (modular head)	A one-piece femoral stem that includes the femoral neck. Modular head. 
12	Hip resurfacing femoral component	A hip resurfacing femoral component replaces the articular surface of the femoral head when the head is not resected. It is made of metal and may or may not have a detachable stem. 
13	Modular hip femoral body	A modular femoral body is the metaphyseal component of a modular femoral component. 
14	Modular hip femoral stem	A modular hip femoral stem extends into the diaphysis of the femur. 
16	Modular neck femoral component	A femoral stem that is designed to be used with a separate exchangeable modular neck. 
17	Modular neck	A modular neck is a separate neck prosthesis that is used with a modular neck femoral component or a modular femoral stem which requires a modular neck. 

15	Modular hip femoral extender	A modular hip femoral extender is used to provide additional length between the femoral body and distal stem of a modular femoral stem. 
Fixation	See: Fixation (Only for kind = 1, 2, 12, 13, 14, 16)	
Side	See: Side	
Size		
	OD (only for kind = 1 and 12)	Outer diameter is available for round prostheses such as fixed neck femoral component (fixed head and resurfacing head).
	Length	Manufacturer defined length (mm).
	Diameter	Manufacturer defined diameter femoral stem.
	Neck angle	Manufacturer defined angle of neck of femoral stem.
Taper type (only for kind = 1, 2 13, 17)		
1	8/10	Connection to the stem or modular body.
2	10/12	
3	11/13	
4	12/14	
5	14/16	
8	other	
Material components		
	See: Material	Material refers to the materials that are used in making up the component.
Fixation surface		
	See: Fixation surface	
Surface treatment		
	See: Surface treatment	

Collar (only for kind = 1, 2, 13, 16)		
		Identified whether the femoral component has a moulded femoral collar.
Ministem (only for kind = 1, 2, 16)		
1	Yes	Identifies whether the femoral component is a mini stem design. A small cementless femoral stem with special design features that enables femoral neck sparing and the entire fixation to be metaphyseal.
2	No	
0	Unknown	

Acetabular component

Prosthesis kind		
4	Non-modular acetabular cup	An acetabular cup is a one-piece acetabular replacement. The component can be made entirely of polyethylene or can have an outer metal shell with an inner insert which is combined during manufacturing. 
5	Modular acetabular cup	An acetabular shell is the outer metal shell which is affixed to bone of a modular acetabular replacement. 
10	Acetabular reinforcement device	An acetabular cage or ring used to reconstruct acetabular defects and support acetabular prosthesis implantation. 
Fixation See: Fixation		
Size		
	OD	Outer diameter of cup.
	ID	Inner diameter can be recorded for the inner part of the bearing surface and can be used to ensure the correct femoral head has been recorded (i.e the outer

		diameter of the head component is not larger than the inner diameter of the acetabular component).
Side	See: Side	
Material prothesis (bone surface)		
	See: Material	Material refers to the materials that are used in making up the component.
Material prosthesis (bearing surface)		
	See: Material	Material refers to the materials that are used in articulation with inlay/head/cup.
Antioxidant (in case material is PE XL + antioxidant)		
1	Vitamin E	
2	Covernox	
13	Other	
Fixation surface		
	See: Fixation surface	
Surface treatment		
	See: Surface treatment	
Articulation – The design of the articular surface of the component which articulates with the femoral head.		
1	Bipolar	Bipolar head articulation
2	Dual mobility	This component is designed with two points of articulation. One between line rand modular acetabular shell (external bearing) and one between liner and femoral head component (internal bearing).
3	Other	Other (single articulation).
Hood – only for non modular acetabular cup - This attribute identifies whether the acetabular cup or modular shell liner have a flat edge or are elevated on one side. In some instances the elevation degree may be specified by the manufacturer.		
1	No Rim	Flat edge (no angle).
2	Elevated Rim Unknown	Elevated rim, angle unknown.
10-35	Elevated Rim x degrees	Elevated rim, angle specified.

3	Hi Wall	Hi wall rim.
8	Unknown	Unknown.
Adjunctive fixation- only for modular acetabular cup - This identifies the way the acetabular prosthesis is fixed into the bone.		
1	None	No additional fixation.
2	Fins	Moulded fins which penetrate into the bone tissue to achieve fixation. 
3	Fins/spikes	Fins and spikes.
4	Flange	Manufactured with flanges which can be bended to conform with the acetabulum and a hook which is positioned in the foramen obturator hook. 
5	Multihole	Manufactured with multiple holes to accommodate additional screws to fix the component.
6	One hole	Manufactured with one apex hole to accommodate an additional screw to fix the component.
7	Pegs	Moulded pegs.
8	Pegs/flanges	Pegs and flanges.
9	Pegs/spikes	Moulded pegs of spikes which are driven into the prepared acetabulum to provide some rotational stability.
10	Screwcup	Screwcup.
11	Spikes	Spikes.
12	Stems	Stems attached to acetabular cup.
0	Unknown	Unknown.

Acetabular liner

Prosthesis kind		
6	Modular acetabular liner	Liner, for modular acetabular cup. 
Size		
	OD	Outer diameter of liner.
	ID	Inner diameter can be recorded for the inner part of the bearing surface and can be used to ensure the correct femoral head has been recorded (i.e. the outer diameter of the head component is not larger than the inner diameter of the hip insert).
Material prosthesis (acetabular side)		
	See Material	Material refers to the materials that are used in making up the component (acetabular side).
Material prosthesis (bearing surface→ articulates with femoral head)		
	See Material	Material refers to the materials that are used in articulation with head.
Antioxidant (in case material is PE XL + antioxidant)		
1	Vitamin E	
2	Covernox	
13	Other	
Articulation		
1	Bipolar	Bipolar head articulation.
2	Dual mobility	A dual mobility modular shell liner is designed with two points of articulation. One between the liner and the modular acetabular shell (external bearing) and one between the liner and the femoral head (internal bearing).
3	Other	Other (single articulation).
Hood - This attribute identifies whether the acetabular cup or modular shell liner have a flat edge or are elevated on one side. In some instances the elevation degree may be specified by the manufacturer.		

1	No Rim	Flat edge (no angle).
2	Elevated Rim Unknown	Elevated rim, angle unkwown.
10-35	Elevated Rim x degrees	Elevated rim, angle specified.
3	Hi Wall	Hi wall rim.
8	Unknown	Unknown.

Femoral head

Soort prothese		
3	Femoral head	A femoral head prosthesis is a ball shaped prosthesis that replaces the natural femoral head and articulates with the articular bearing surface of the acetabular prosthesis. 
11	Femoral bipolar component	A femoral bipolar component articulates with a standard femoral head replacement and the patient's natural acetabular articular surface. 
Size		
	OD	Outer diameter of head.
	ID	Inner diameter of head (only in case of femoral bipolar component).
Taper type		
1	8/10	Connection to the neck.
2	10/12	
3	11/13	
4	12/14	
5	14/16	
8	Other	
Material prothesis (in case femoral bipolar component, outer side)		
	See: Material	Material refers to the materials that are used in making up the component.
Material prothesis (bearing surface → only in case femoral bipolar component, inner side)		

	See: Material	Material refers to the materials that are used in articulation with unipolar head.
Antioxidant (only in case material is PE XL + antioxidant)		
1	Vitamin E	
2	Covernox	
13	Other	
Head/neck length variation – only femoral head (unipolar) - offset alteration		
	Plus (+)mm	
	Standard (0)mm	
	Minus (-mm)	
	Small, Medium, Large of x-large etc	
Bipolar head design		
1	Modular	
2	Moulded	

Generic attributes

Fixation

1	Cemented	Component that is intended to use cement to hold the component in place.
2	Cementless	Component that is intended to allow for the bone to grow into the surface of the component for fixation.
0	Unknown	Unknown.

Side

Side		
1	Left	
2	Right	
13	Universal Left/Right	

Material

Material (incl. material bearing)		
1	Stainless steel	
2	Cobalt chrome	
3	Titanium	
4	Ceramics	
5	Composite	
6	Titanium with hardened layer	
7	PE Standard	
8	PE Cross-linked	
9	Tantalum	
15	Oxidized Zirconium	
18	Pyrocarbon	
19	Silicone rubber	
21	PE Crosslinked with Antioxidant	
22	Ceramics/Oxidized Zirconium	

Fixation surface

The design of the component fixation surface which articulates with bone.

Fixation surface		
1	Matte (cemented)	Matte finish surface.
2	Polished (cemented)	Highly polished surface.
3	Porous metal (cementless)	Tantalum or spongiosa type metal products.
4	Beaded (cementless)	Microspheres of either cobalt chrome or titanium alloy attached by the use of high temperatures.
5	Grit-blast (cementless)	A textured surface created by bombarding the implant with small abrasive particles.
6	Plasma/arc deposition (cementless)	Molten material sprayed on the implant creating a textured surface.
7	Mesh (cementless)	Metal pads attached by diffusion bonding.
8	Other (cementless)	Other surface treatment.
9	None (cementless)	No surface treatment.
0	Unknown (cementless)	Unknown.

Surface treatment

The treatment on the surface of the component. The treatment can be on the bearing surface side (side interfacing with another component) or the fixation surface side (side affixed to bone). It is designed to dissolve, or disappear, into the bone or cement fixation after being implanted.

Surface treatment		
1	None	No surface treatment
2	TiN	Titanium Nitride is a ceramic surface coating which gives the prosthesis a gold colouring.
3	Silver	Silver coated surface area.
4	HA	Calcium phosphate compound sprayed directly onto the component with or without porous coating.
5	PMMA	Poly-methyl methacrylate is a transparent thermoplastic.
6	Biofoam	The structure of Biofoam® Cancellous Titanium metal resembles that of trabecular bone. The porosity is between 60 and 70%, creating an open cell structure that encourages biological fixation for long-term stability.
7	TiN/Silver	TiN en Silver coating.
8	Other	
10	BoneMaster	BoneMaster™ is an electrochemical method of depositing hydroxyapatite [HA: Ca10(PO4)6(OH)2] coating on metallic orthopedic implants. HA coatings, with

		composition similar to the mineral content of bone, can enhance the osseo-integration of metallic implants with host bone.
11	Griptionn	Griptionn porous coating is composed of super-textured asperity topography (STAT), which combines macrotexture and microtexture topographies to provide a favorable mechanical loading environment for bone construction, enabling greater cell adhesion and proliferation.
12	Osseoti	Human CT data in combination with 3D printing technology to build a structure that directly mimics the architecture of human cancellous bone.
13	Porocoat	The Porocoat Porous Coating process results in a strong bond of proud, randomly arranged beads that form interconnecting pores for ingrowth.
14	PPS	Porous plasma spray.
15	TiCP	TiCP is a commercially pure titanium alloy characterized by having a good strength-to-weight ratio, corrosion resistance and ductility.
16	TPS	Titanium plasma spray.
17	Plasmapore	Coated with a layer of fine titanium powder applied in a plasmaspray process under vacuum. The Plasmapore® pore sizes range from 50 to 200 µm with a microporosity of 35 % and a thickness of 0.35 mm.
0	Unknown	Unknown.