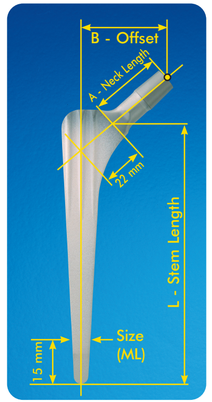
CERAFIT

RANGE AND DIMENSIONAL CHARACTERISTICS



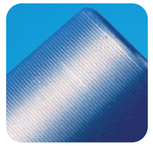
SIZE	STEM LENGTH mm	Neck* LENGTH mm	Offset* B mm	HAC
7	120	28	37	4307
8	124	29	38	4308
9	128	31	39	4309
10	132	32	40	4310
11	136	33	41	4311
12	140	35	42	4312
13	144	36	43	4313
14	148	37	44	4314
15	152	39	45	4315
16**	156	40	46	4316
17**	160	41	47	4317
18**	165	43	48	4318

* For a medium neck
** Special implants available on request

FIXATION OF THE FEMORAL HEADS

Fixation by a 12/14 cone with an angle of 5°42'.

The microthreaded surface of the cone acts as a mouldable superficial layer, which allows reduction of the stresses at the alumina-titanium interface.



FEMORAL HEADS 12/14

Al_2O_3 ISO 6474			
Ø mm	Description		Reference
32	Short neck	-4	2003
32	Medium neck	0	2004
32	Long neck	+4	2005
28	Short neck	-3,5	2000
28	Medium neck	0	2001
28	Long neck	+3,5	2002
STAINLESS STEEL ISO 5832-9			
32	Short neck	-4	2220
32	Medium neck	0	2221
32	Short neck	+4	2222
32	Long neck	+8	2263

STAINLESS STEEL ISO 5832-9			
Ø mm	Description		Reference
28	Short neck	-3,5	2223
28	Medium neck	0	2224
28	Long neck	+3,5	2225
28	Extra long neck	+8	2261
28	Extra long neck	+12	2262
22,2	Short neck	-3,5	2217
22,2	Medium neck	0	2218
22,2	Long neck	+3,5	2219

CERAVER
EXPERIENCE - INNOVATION

CERAFIT

THE MULTICONES CERAFIT STEMS

REFERENCES

SIZES	MULTICONES Cerafit Stem H-A.C.
7	4307
8	4308
9	4309
10	4310
11	4311
12	4312
13	4313
14	4314
15	4315
16*	4316
17*	4317
18*	4318

* Special implants available on request

Document intended for the exclusive use of healthcare professionals. HAC CERAFIT Stem® - hip prosthesis – is a class III CE marked medical device made by CERAVER – LES LABORATOIRES OSTEAL MEDICAL Company and for which Conformity assessment was carried out by Notified Body G-MED n°0459. HAC CERAFIT Stem prosthesis is intended to replace completely a hip joint that cannot be treated through other therapies. Before any surgical procedure, read carefully instructions for use and surgical technique. For proper use and installation of these devices, qualified professionals must use instruments of the associated kit

GMED ISO 13485

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THE MULTICONES CERAFIT STEM

THE MULTICONES STEMS HAC

CERAVER
EXPERIENCE - INNOVATION

THE MULTICONES CERAFIT STEM

HISTORY: 1974: FIRST CEMENTLESS STRAIGHT STEM

In 1974, CERAVER developed a press-fit cementless straight stem for metaphyso-diaphyseal filling. This stem had longitudinal sections in truncated taper shape, and quadrangular transverse sections permitting excellent stability in rotation.

In terms of the implant surface finish, we chose a polished surface to avoid the release of metallic particles and its consequences. This was a very bad choice at the time, since large number of authors subsequently demonstrated, that only a roughened surface finish permits the bone ingrowth in contact with a titanium implant.

The clinical results have shown evidence that a stem with quadrangular transverse sections has excellent stability in rotation and that the majority of failures were due only to the polished surface.

OBJECTIVES AND CONCEPTS

In view of the above observations, we decided to retain the same OBJECTIVES for the new implant: primary stability, secondary stability and preservation of the bone stock.

In order to meet these objectives, we adopted the CONCEPTS which we originally used for the first cementless stem and also some of the concepts from our OSTEAL cemented stem :

- A cervico-diaphyseal angle of 132°, an anatomical/biomechanical compromise.
- A medial curve avoiding post-operative varisation.
- Large sections with relatively sharp angles, a compromise between stress distribution and antirotation.
- Truncated taper shapes to guarantee excellent primary stability, a 6° angle in the frontal plane and a 2° angle in the diaphyseal sagittal plane.
- A relatively long length, 136 mm for the most commonly used size 11, permitting better stress distribution and avoiding varisation and incorrect insertion.
- Neck length and lateralization, increasing according to size, to restablish normal anatomy and biomechanics.

THE MATERIAL: $TiAl_6V_4$ TITANIUM ALLOY

June 1972: First implantation in the world of a titanium alloy femoral stem by CERAVER.

After more than 35 years of implantation, this material remains the best metal alloy adapted to the specifications of femoral implants. It is the reference for cemented and cementless femoral stem.

THE OBJECTIVES

PRIMARY STABILITY

To minimize micromovements in 3 areas :

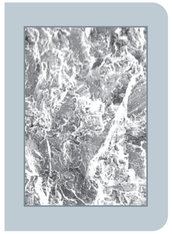
- Rotation
- Post-operative « varisation »
- Distal migration

SECONDARY STABILITY

Bone ingrowth on the implant

BONE STOCK PRESERVATION

Primary stability, secondary stability and bone stock preservation are the major objectives for the long-term stability of a cementless stem.



Rough surface
M.E.B. of the surface of rough $TiAl_6V_4$

THE CONCEPTS

PRIMARY STABILITY

Rotation
- Quadrangular transverse sections
- "Multicones" in all 3 planes
- Anterior and posterior metaphyseal fins

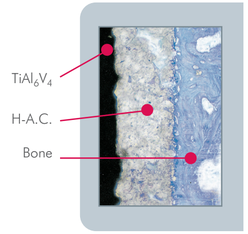
Post-operative varisation
- Medial curve
- Stem lenght

Distal migration
- Metaphyso-diaphyseal contact
- « Multicones » in all 3 planes

SECONDARY STABILITY

Bone ingrowth on the implant :

- With a rough surface
- With the HA coating

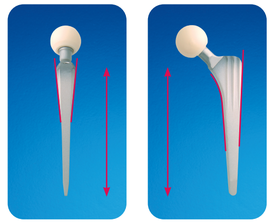


H-A.C.
Hydroxyapatite coating
$Ca_{10}(PO_4)_6(OH)_2$

Biocompatible, bioactive and osteoconductive

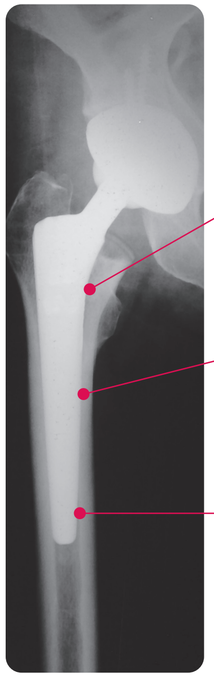
CONSIDERATIONS RELATING TO THE CONCEPTS

LONG LENGTH

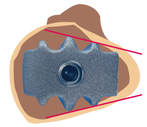


- Optimal contact and fit with metaphysis and diaphysis.
- Increase area of contact between bone and implant.
- Self-alignment in the femur.
- Reduction in risk of post-operative varisation.

QUADRANGULAR SECTIONS



- Quadrangular transverse sections and metaphyseal fins in the proximal part ensure stability in rotation.



- Quadrangular transverse sections in the middle and distal sections to prevent rotation.

Primary stability to allow bone ingrowth on the implant and preservation of bone stock are the major objectives guaranteed for the long-term stability of a cementless implant.