



Operating Instruction

Cementless Hip System

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Cementless Hip System

Introduction

Years of experience with outstanding clinical results in the implantation of Cementless straight stems led to the development of the cementless hip stem.

13 sizes are available in various lengths with a CCD angle of 135°. The system is equipped with a 12/14 Eurocone, manufactured to the measurements specified by Ceramtec for use with ceramic heads. Metal heads of the same cone size can also be used. The cementless hip stem can be combined with many cup systems and so can be adapted individually to the patient's anatomy.

Indications

- Degenerative, post-traumatic or rheumatoid arthritis
- Degenerative, post-traumatic or rheumatic arthrosis
- Avascular necrosis or necrosis due to tumour
- Arthrosis as a result of congenital or acquired intra-articular or extra-articular (axial) deformities
- This system can also be indicated to salvage previously unsuccessful operation attempts

Contraindication

- Acute or chronic, local or systemic infection
- Inadequate bone substance or quality, not permitting stable Cementless fixation of the implant
- Loss of the ligament apparatus
- Hypersensitivity to the materials employed

Preoperative planning

To estimate the subsequent implant size and determine the level of resection, preoperative planning with the aid of x-ray templates is recommended (figure 1). The interaction with the preferred cup system and/or possible complications during the operation can thus be assessed beforehand.

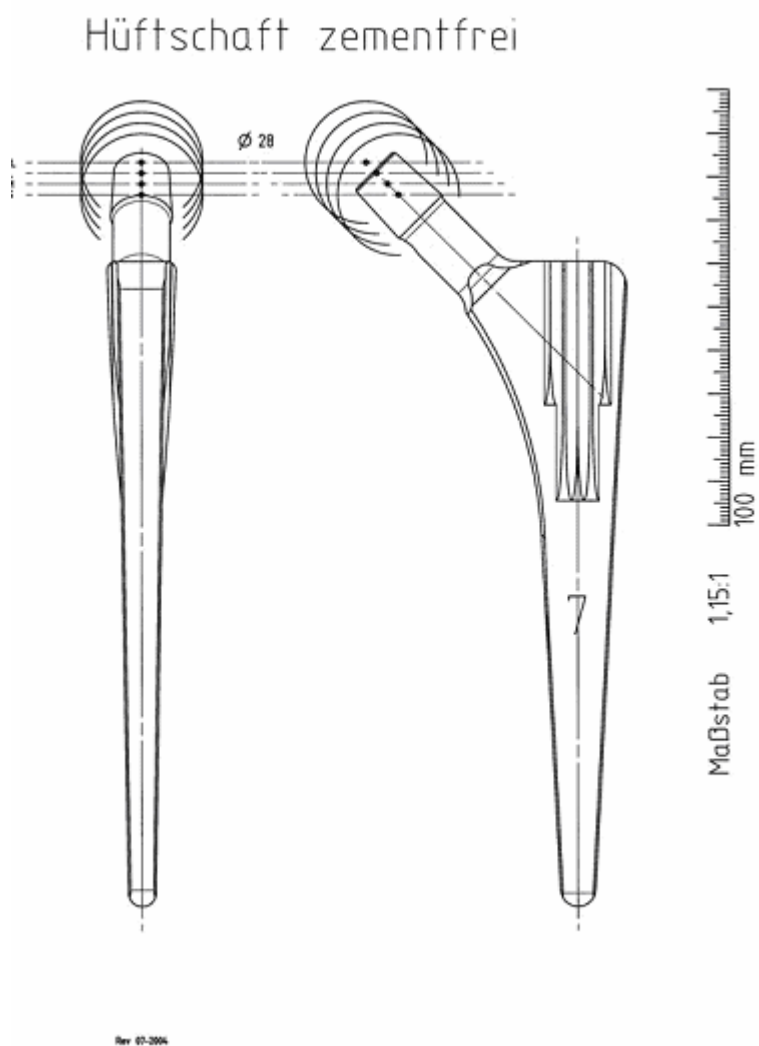


Figure 1: X-ray template of hip stem cementless size 7

Approach to the hip joint

Every approach to the hip joint regarded by the surgeon as suitable is possible. The joint should be sufficiently exposed so that the surgeon has a good view of the anatomical structures and can work correctly with the instruments unobstructed.

Resection of the femoral neck

The resection of the femoral neck is carried out according to the preoperative planning at an angle of about 45° to the femoral axis (figure 2).

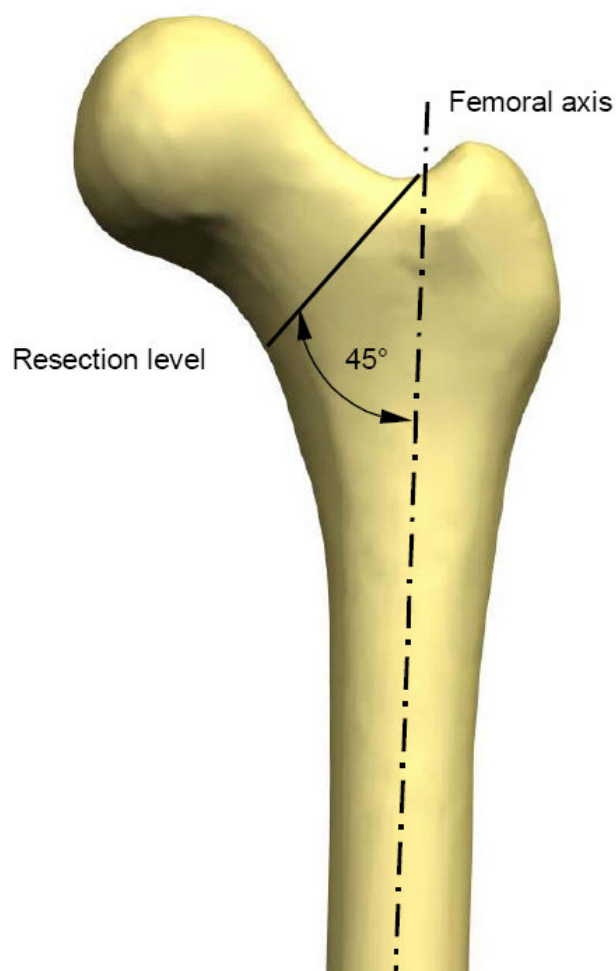


Figure 2: Diagram of resection level

Opening the medullary cavity

The medullary cavity is opened using the cavity gouge (figure 3). This should be applied far laterally and posteriorly. This facilitates subsequent insertion of the rasps in the direction of the femoral axis. Fracturing the greater trochanter should be avoided.

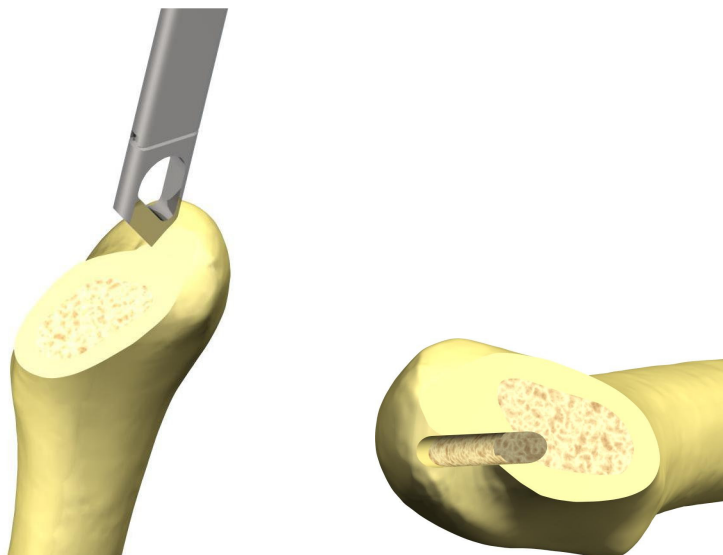


Figure 3: Opening the medullary cavity with the gouge

The gouge should be applied according to the desired anteversion of the stem. The medullary cavity opening can be widened with the femoral rasp (figure 4).

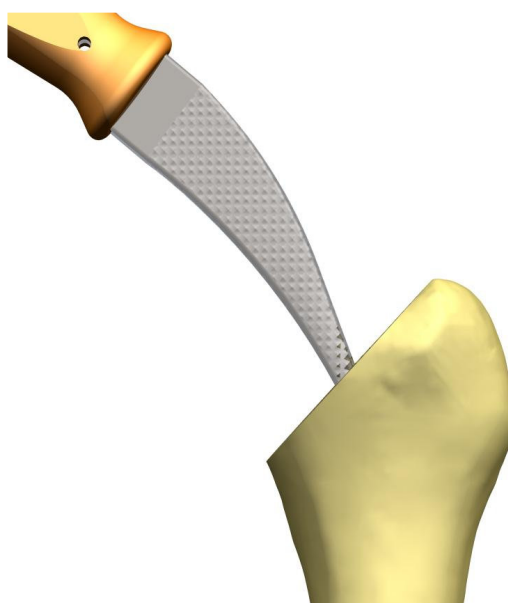


Figure 4: Femoral rasp for widening the medullary cavity opening

Preparation of the femoral shaft

After the medullary cavity has been opened, rasping the femoral shaft can commence (figure 5). Start with the smallest rasp size, which is attached to the rasp handle. The other rasps are then used in ascending order of size until the final size is reached. The rasp sizes correspond to the implant sizes. Check that the rasps fit correctly in the femur under image intensifier control.

Figure 5:

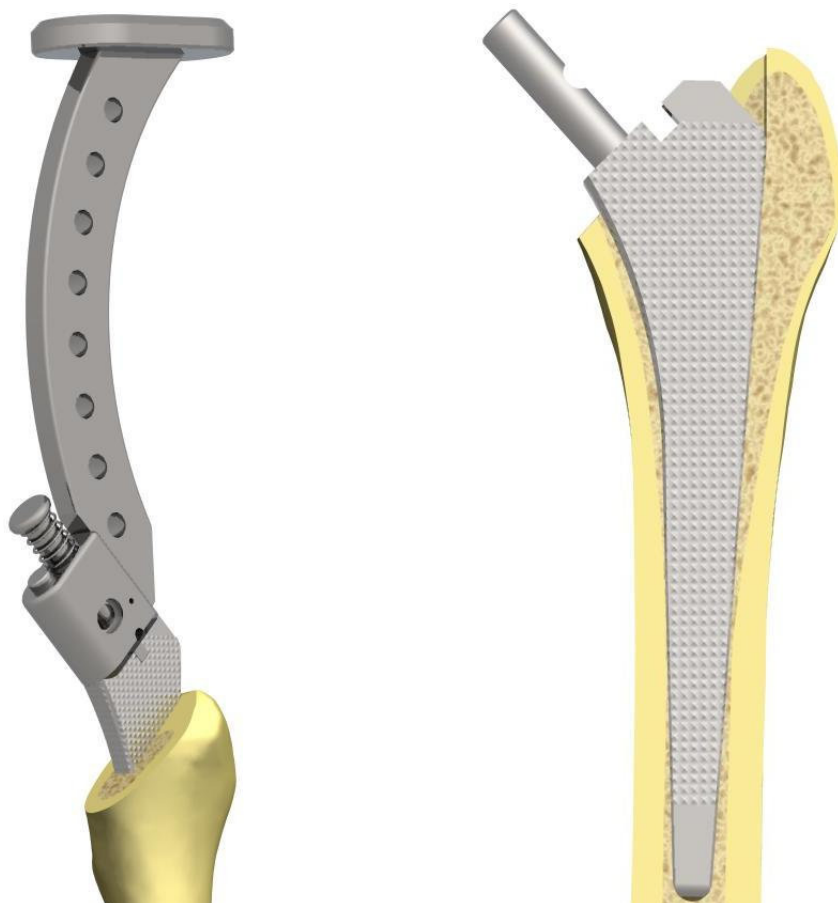


Figure 5: Rasping the femur

If the planned rasp size or depth is not reached, this can be because the rasp direction does not run parallel to the axis. In this case, space can be created proximally with the femoral rasp and further rasping then becomes possible.

Trial reduction

The rasps are constructed so that they can also be used as a trial prosthesis. For reduction, the handle is removed from the rasp which remains in the femur and the test cone is put on. Trial heads are available in sizes 28 and 32 with neck lengths S to XL for checking the leg length and range of movement (figure 6).

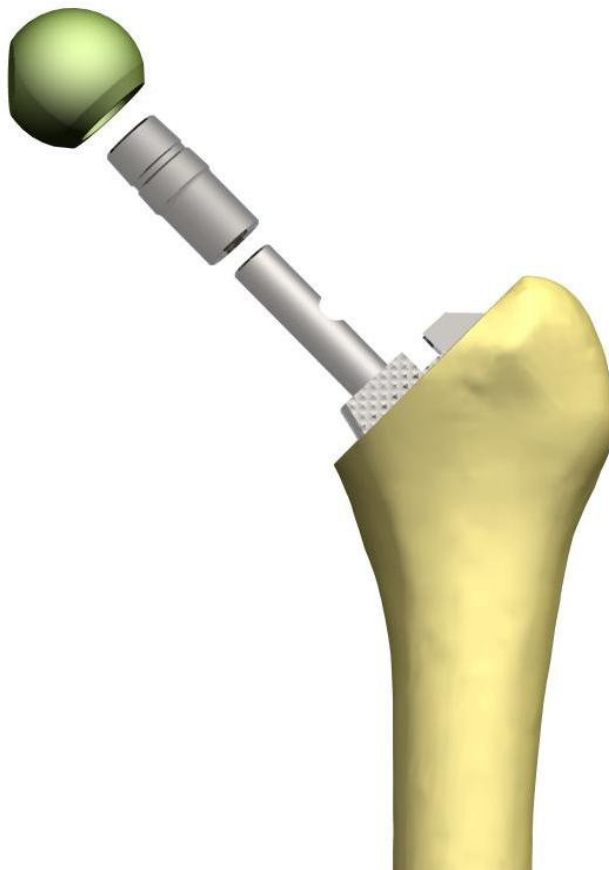


Figure 6: Attaching the test cone and a trial head to the rasp

Stem implantation

The stem size to be implanted is selected according to the last rasp employed. The implant is inserted as far as possible into the femur by hand. The implant is brought to the desired depth with the stem impactor and gentle hammer blows to achieve adequate press-fit (figure 7).

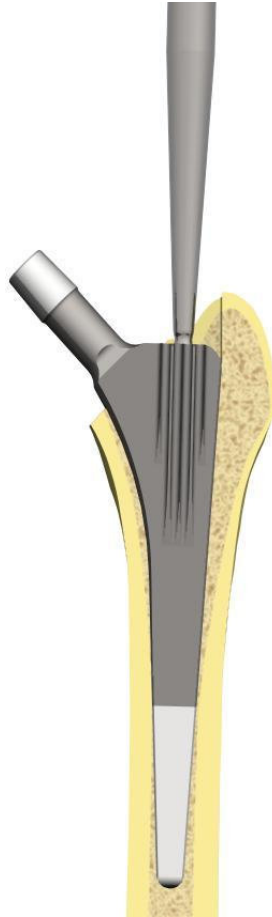


Figure 7: Implantation of the stem

After the stem cone has been cleaned and dried thoroughly, the original spherical head with the desired neck length is attached according to the manufacturer's instructions. This is followed by reduction by hand along with wound closure in layers in the way preferred by the surgeon.

Implants

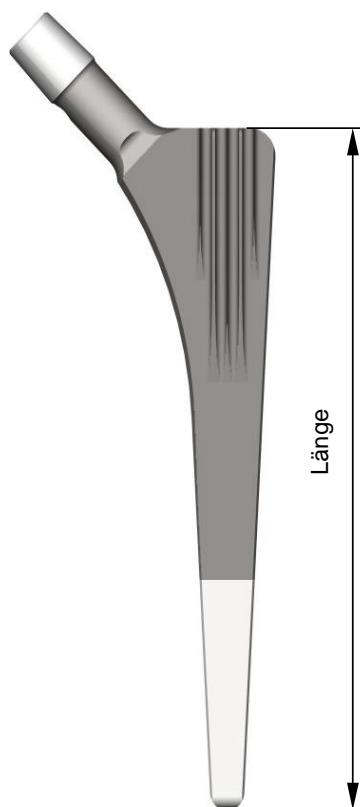


Figure 8: Stem cementless

Shaft Size	Length	Art.No.
		TiAl6V4 ISO 5832/3
1	135 mm	3040-0-0135
2	137 mm	3040-0-0137
3	139 mm	3040-0-0139
4	141 mm	3040-0-0141
5	143 mm	3040-0-0143
6	145 mm	3040-0-0145
7	148 mm	3040-0-0148
8	151 mm	3040-0-0151
9	154 mm	3040-0-0154
10	157 mm	3040-0-0157
11	160 mm	3040-0-0160
12	163 mm	3040-0-0163
13	168 mm	3040-0-0168

Layout of basic hip instruments

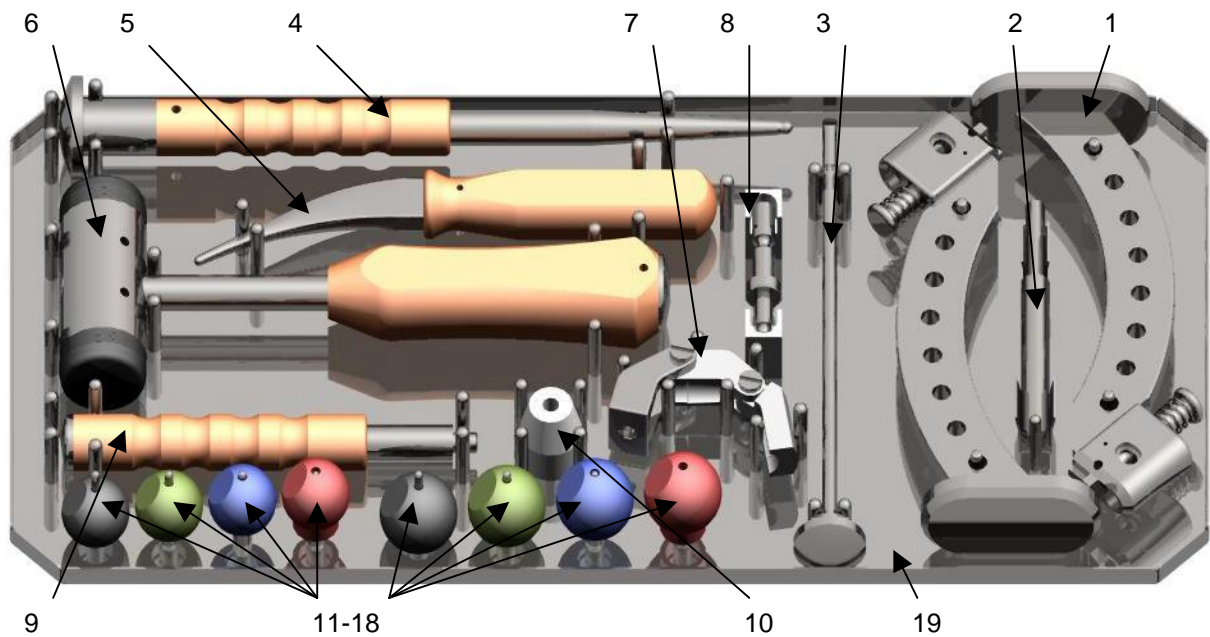


Figure 9: Basic hip instruments

	Instruments	Art.No.
1	Rasp handle, can be disassembled	3940-0-0001
2	Guide rod	3940-0-0002
3	Gouge	3940-0-0003
4	Stem impactor	3940-0-0004
5	Femoral rasp	3940-0-0005
6	Hammer	3940-0-0006
7	Stem extractor	3940-0-0007
8	Handle adapter for stem extractor	3940-0-0008
9	Head impactor handle	3940-0-0009
10	Head impactor headpiece	3940-0-0010
11	Trial head 28 K, cone 12/14	3940-0-0011
12	Trial head 28 M, cone 12/14	3940-0-0012
13	Trial head 28 L, cone 12/14	3940-0-0013
14	Trial head 28 XL, cone 12/14	3940-0-0014
15	Trial head 32 K, cone 12/14	3940-0-0015
16	Trial head 32 M, cone 12/14	3940-0-0016
17	Trial head 32 L, cone 12/14	3940-0-0017
18	Trial head 32 XL, cone 12/14	3940-0-0018
19	Basic Hip Instruments Set case	3940-0-0019

Layout of hip stem cementless instruments

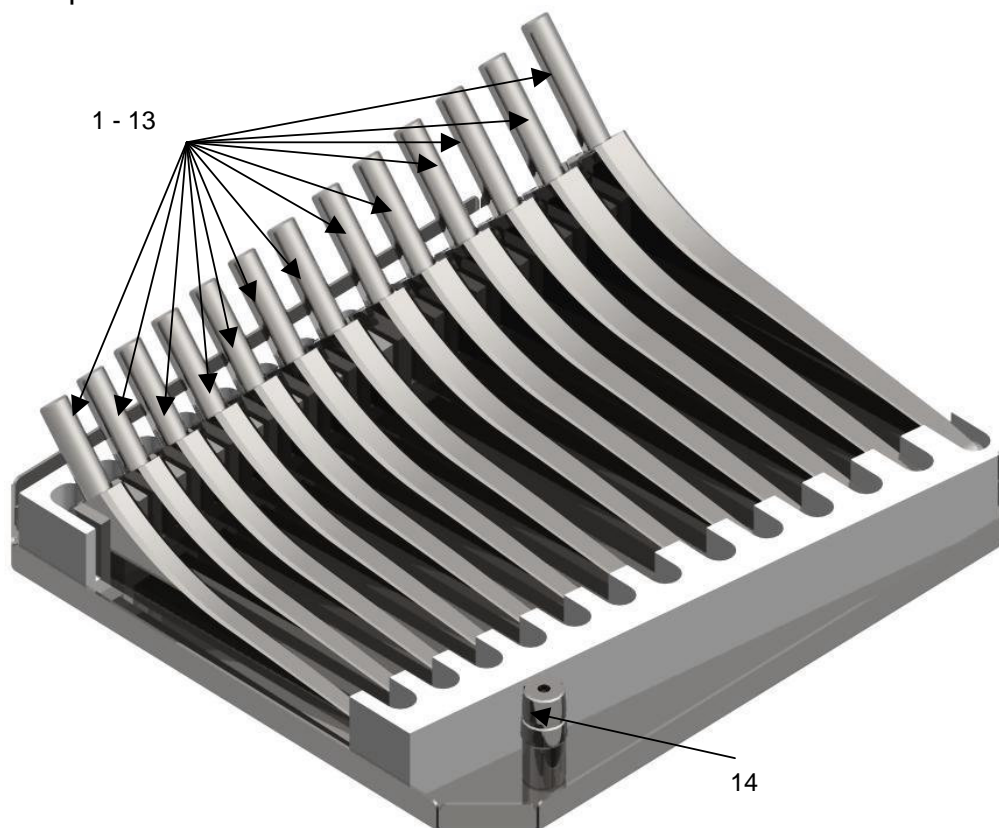


Figure 10: Instruments

	Instruments	Art.No.
1	Rasp for Hip Stem Size 1	3940-0-0135
2	Rasp for Hip Stem Size 2	3940-0-0137
3	Rasp for Hip Stem Size 3	3940-0-0139
4	Rasp for Hip Stem Size 4	3940-0-0141
5	Rasp for Hip Stem Size 5	3940-0-0143
6	Rasp for Hip Stem Size 6	3940-0-0145
7	Rasp for Hip Stem Size 7	3940-0-0148
8	Rasp for Hip Stem Size 8	3940-0-0151
9	Rasp for Hip Stem Size 9	3940-0-0154
10	Rasp for Hip Stem Size 10	3940-0-0157
11	Rasp for Hip Stem Size 11	3940-0-0160
12	Rasp for Hip Stem Size 12	3940-0-0163
13	Rasp for Hip Stem Size 13	3940-0-0168
14	Test Cone Segment Hip Stem	3940-0-0200

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