implantcast

DIRECT ANTERIOR APPROACH

Surgical Technique

implantcast

DAA

Direct Anteriorer Approach

The herein described hip system and minimally invasive instrumentation
was developed in co-operation with
Dr. med. Metzner, trauma and reconstructive surgery,
Hellmig-Krankenhaus in Kamen.

TABLE OF CONTENTS

Nota Bene: The described surgical technique is the suggested treatment for the uncomplicated procedure. In the final analysis the preferred treatment is that which addresses the needs of the individual patient.

INTRODUCTION

The minimal-invasive implantation of hip endoprostheses is becoming increasingly significant. If nothing else, the rising costs in the health service means that a long term ward stay is no longer common practice. Through the following new minimal-invasive surgical methods, using the implantation of the EcoFit® cup and the EcoFit® stem with cementless implantation techniques, the ward stay and thus the costs are significantly lowered. This soft tissue-conservative surgical technique makes it possible to perform the prosthesis implantation through a significantly smaller entrance, without muscles or ligaments being loosened or separated from their source. Through this, an evident reduction in post-operative pain and this accelerated mobility is achieved.

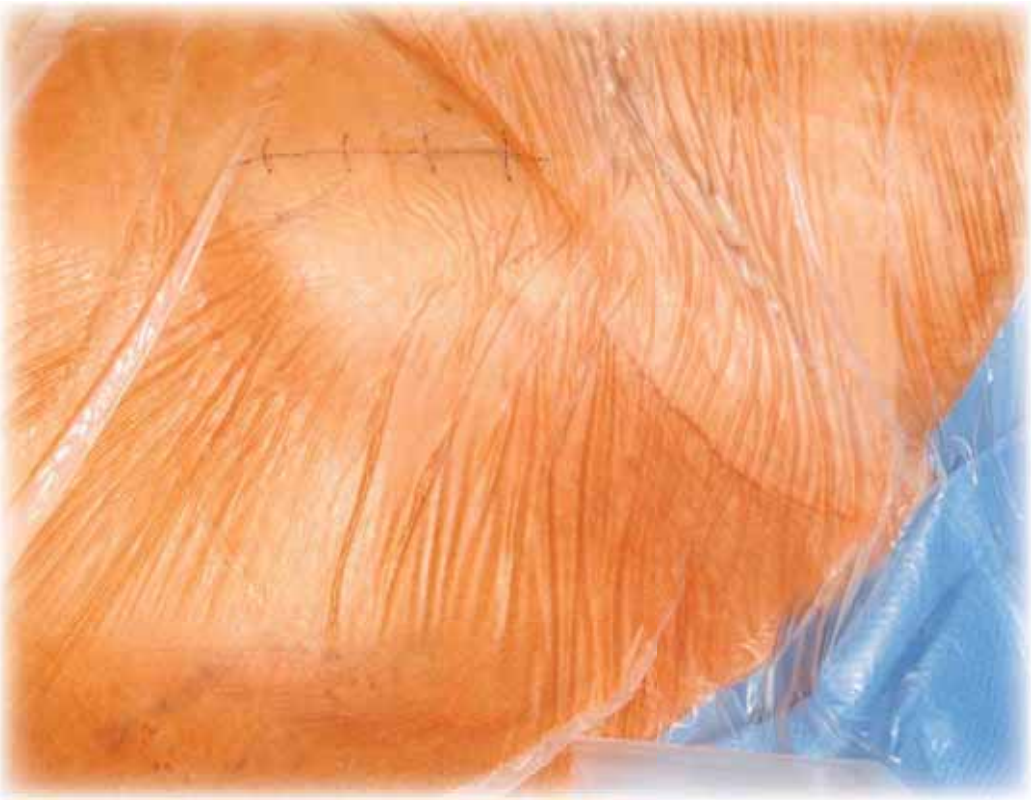
POSITIONING

The patient is laid on their back with padding under the pelvis, or even better, with a lowerable leg positioning apparatus under the cover of both legs, e.g. by means of a double-U-cloth.

ACCESS

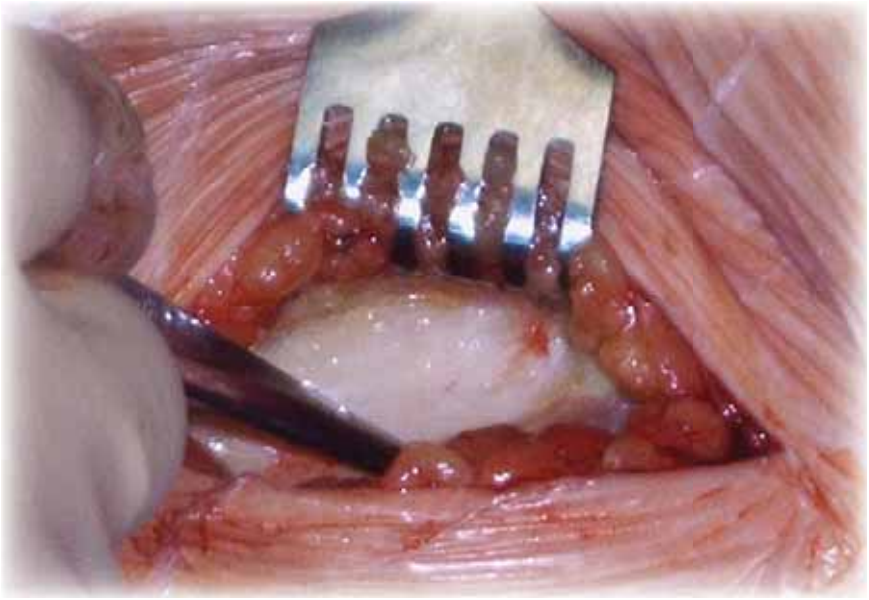
The skin incision takes place in a longitudinal direction of 2 transverse fingers distally and laterally of the Spina iliaca anterior superior.

The length of the incision corresponds to the size of the planned hip cup.



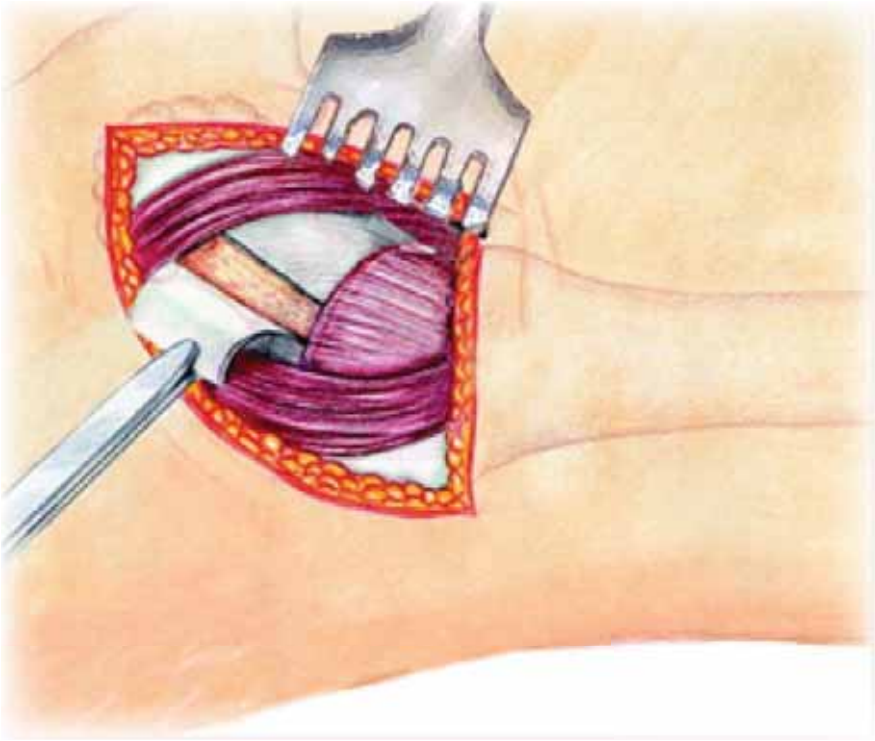
PREOPERATIVE PLANNING

To expose the joint capsule, carefully perform a blunt dissection between the M. tensor fascia latae and the M. femoris rectus.



THE SOFT TISSUE ANATOMY

Attention must be paid to the protection of the Nervus cutaneus femoris lateralis. The deep fascia is to be incised on the medial side of the M. tensor fascia latae. The identification of the joint head is most successful under blunt dissection with the index finger.



APPLYING THE RETRACTORS

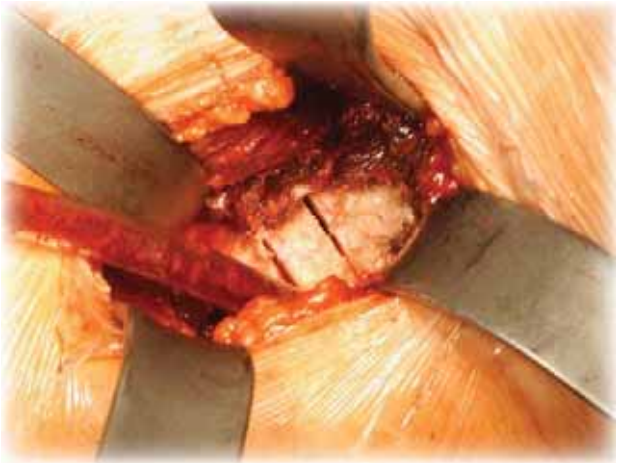
The first narrow pointed retractor is placed in the lateral aspect of the trochanter major. The M. Sartorius is held in a medial direction with muscle hook. The A.V. circumflexa femoralis lateralis lies deep in the joint capsule. Two more narrow retractors are placed on the medial and the lateral femoral neck.

THE ANTERIOR CUP EDGE AND THE OPENING OF THE JOINT CAPSULE

Upon display of the front edge of the cup after disconnecting the A.V. circumflexa fem. lat. between ligatures, an incision is made between the two origin heads of the M. femoris rectus. If necessary, the Lig. reflectum of the M. femoris rectus can be split. Subsequently, a broad retractor is placed under the M. rectus on the front edge of the acetabulum. The display of the M. fem. rectus is achieved by bending the hip joint. For the preparation of the femoral neck, make an H-shaped incision in the joint capsule with the pointed bent electrocauter. Now the medial and lateral retractors can be converted intra-articularly.

THE FEMORAL NECK OSTEOTOMY

The osteotomy of the femoral neck is accomplished as a double osteotomy. The first cut takes place in accordance with the preoperative planning, along the Linea intertrochanterica, and the second cut is made 1cm medial to it. Now the femoral neck disc can be removed after detaching it from the dorsal capsule tissue.

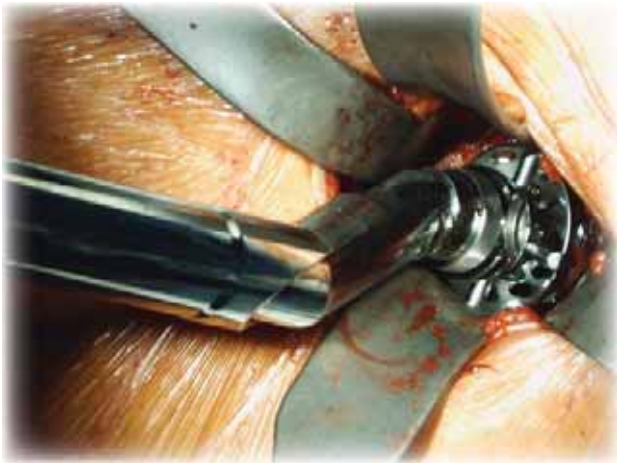


THE HEAD EXTRACTION

The femoral head extraction then takes place in the conventional way, using a corkscrew extractor.

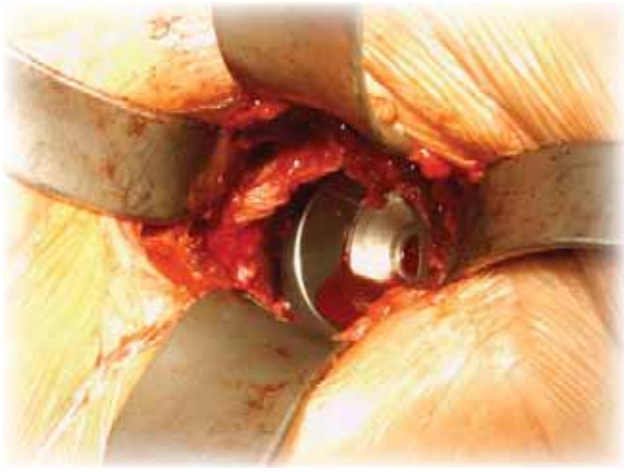
THE ACETABULUM PREPARATION

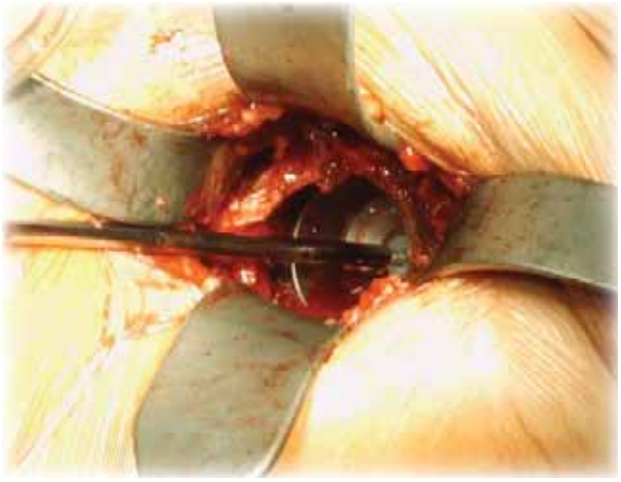
After implementing the retractors laterally behind the Os ilieum, ream the acetabulum up until the surface is sufficiently spongy using the side-specific dorsal acetabular hook with the doubly curved reamer, medially behind the medial edge of the hip cup.



THE IMPLANTATION OF THE CUP

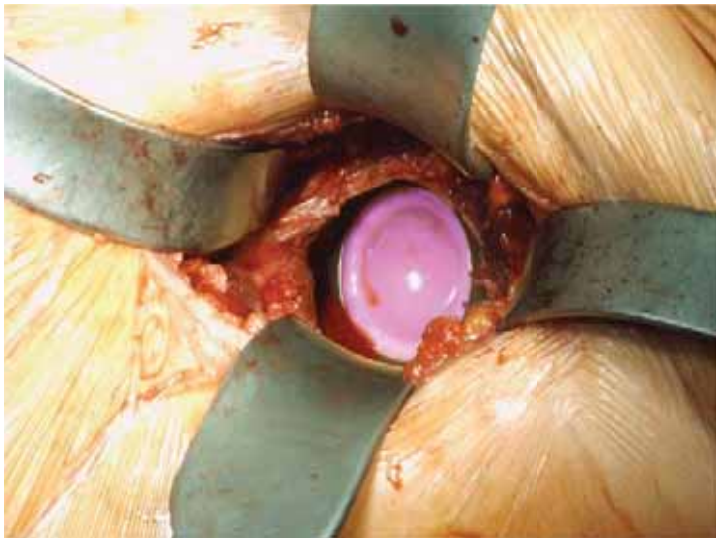
With the help of the curved setting instrument, the cup is placed and impacted according to the last used reaming size, and then the base closure screw is inserted and fixed.





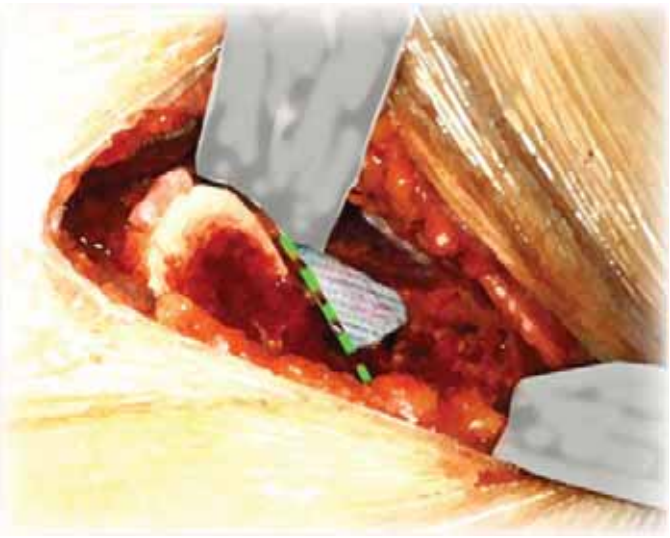
PLACING OF THE CUP INSERT

Once the cup is correctly seated, the ceramic or PE-inlay with or without a 10° shoulder is now impacted.



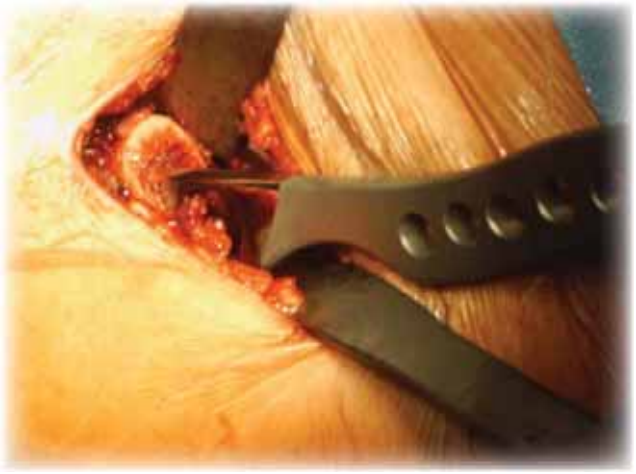
EXPOSITION OF THE FEMUR

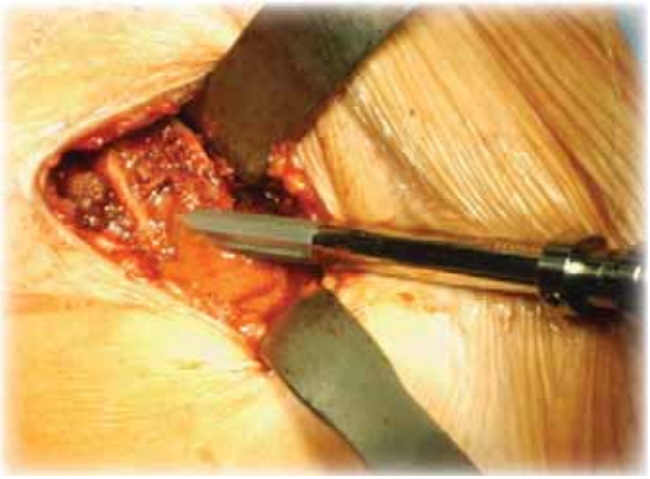
For the representation of the femoral medullary cavity entrance, the equilateral pelvis should be supported or the legs should be lowered, and the leg which is being operated on should be reduced and externally rotated. The stretched position of the knee should be respected here, in order to reduce the course of the Tractus iliotibialis. The dorsal joint capsule is mobilized or replaced. In rare cases it can be necessary to release the obturatorius internus and gemelli in order to achieve sufficient exposure. Subsequently, the femur is raised with a retractor and the femoral elevator is set under the greater trochanter.

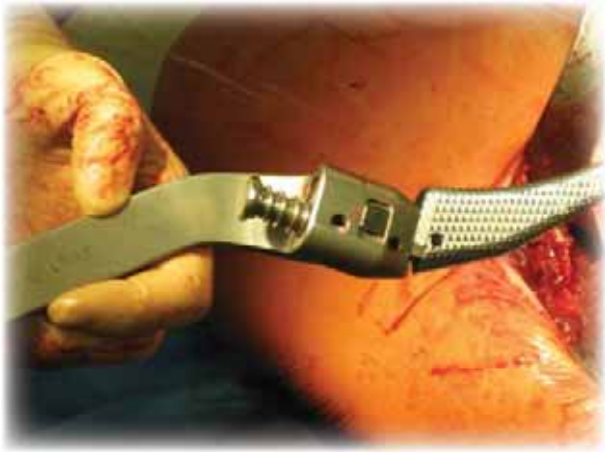


THE FEMUR PREPARATION

After opening the medullary cavity with the box chisel (and then optionally with the femoral awl), prepare it gradually with the EcoFit® broach using the GIS®-Broach Handle.

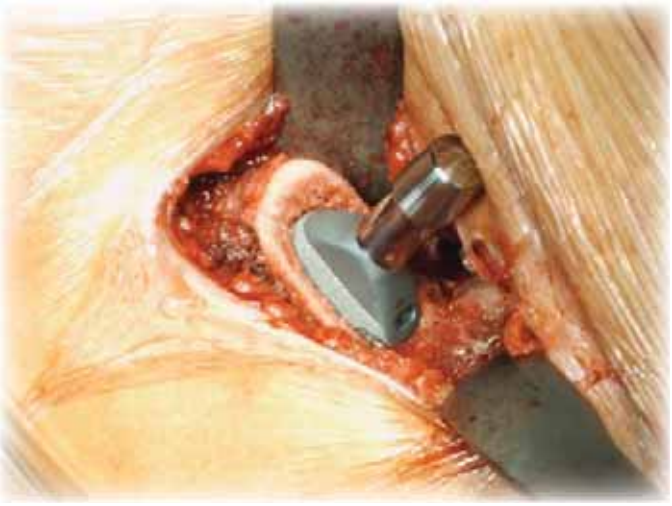


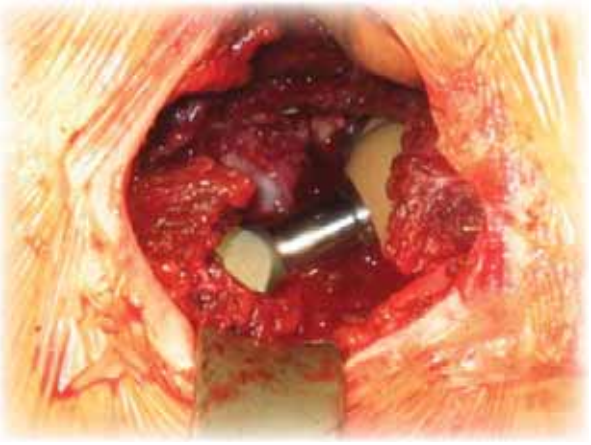




STEM IMPLANTATION

After performing a test run with the final broach as a trial in order to determine the stem size, the EcoFit® stem of the appropriate size is implanted, either with a cemented or a cementless technique, and then the femoral head of the appropriate neck length is set in place.



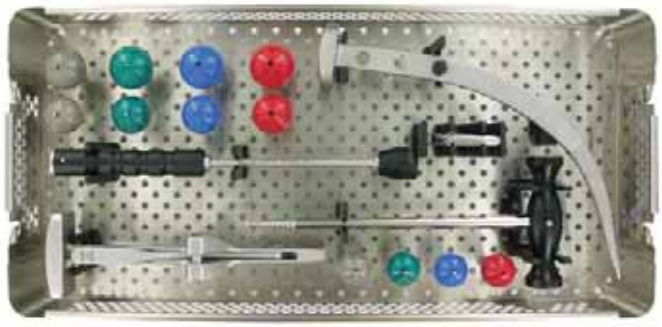


ADVANTAGES OF MINIMALINVASIVE TECHNIQUE

- minimal damage to soft tissues
- significant reduction in pain
- shorter ward stay
- reduction in costs
- reduction of blood loss
- reduced risk of luxation in comparison to other approaches
- easy preparation

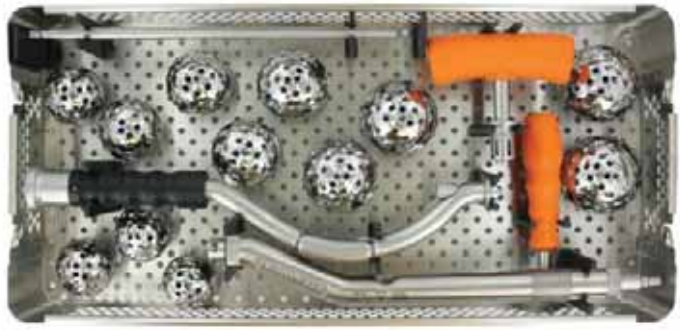
INSTRUMENTS STEM SYSTEMS

7999-7047
DAA EcoFit® container

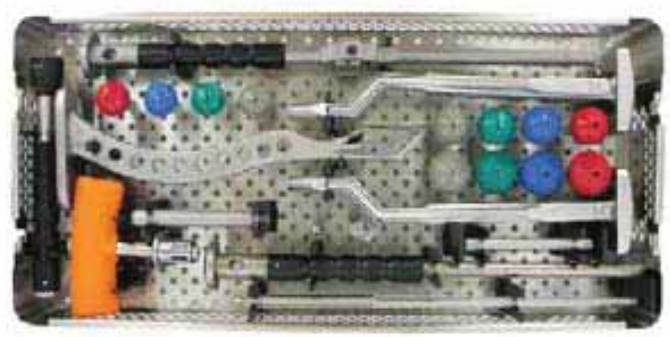


7999-7048
DAA EcoFit® basic container

8007-7996
DAA Aida® container

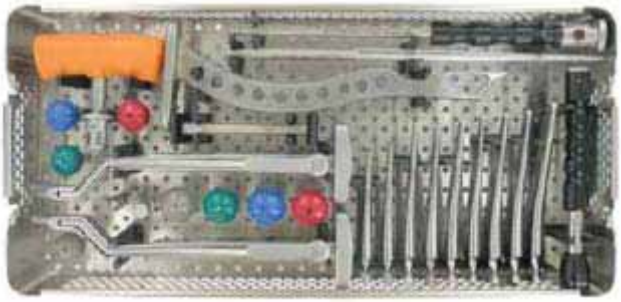


7999-0800
GIS® acetabulum reamer container
with curved cup impactor

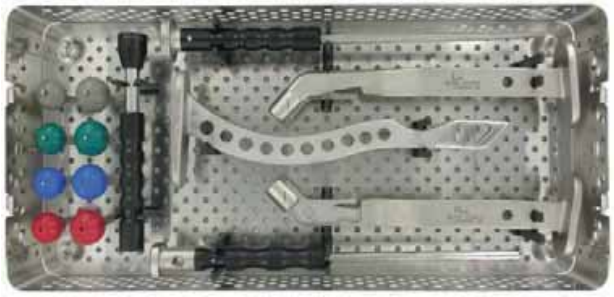


8004-9001
Actinia® GIS® container

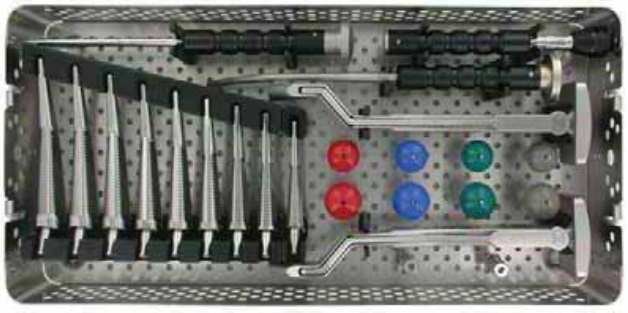
INSTRUMENTS STEM SYSTEMS



7999-7049
EcoFit® easy lock GIS® container

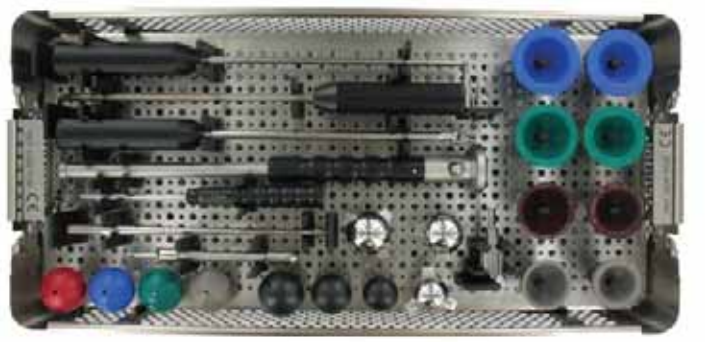


8006-7996
AJS® snap lock GIS® container



8007-7997
Aida® easy lock GIS® Container

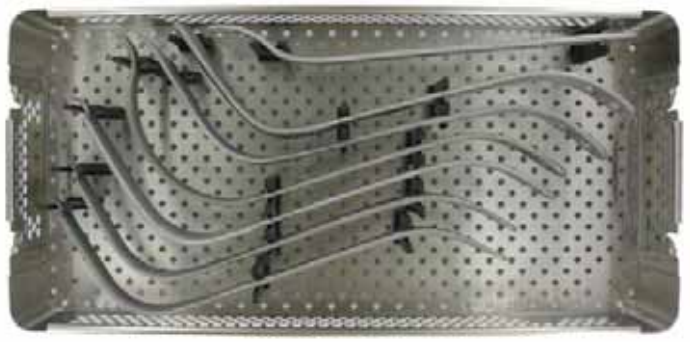
INSTRUMENTS CUP SYSTEMS



0220-1136
EcoFit® cup GIS® container
36mm (top)

0220-1136
EcoFit® cup GIS® container
36mm (bottom)

INSTRUMENTS ACCESSORIES



7999-7514
GIS® retractor container

INSTRUMENTS CONTAINER 7999-7047

stem impactor
3039-0109

stem impactor angulate
7512-2022

EcoFit® trial neck lateralised
7040-1214

EcoFit® trial neck standard
7039-1214

EcoFit® broach

7039-3062	6,25 mm
7039-3075	7,50 mm
7039-3087	8,75 mm
7039-3100	10,00 mm
7039-3112	11,25 mm
7039-3125	12,50 mm
7039-3137	13,75 mm
7039-3150	15,00 mm
7039-3175	17,50 mm

INSTRUMENTS CONTAINER 7999-7048

DAA medullary opening broach blank
7512-0082

DAA broach handle
7512-0085

head impactor long
7512-0080

ic- head extractor
7512-4450

modular box chisel
7512-0081

trial head snap taper 12/14mm
7962-2800 28mm, short
7962-2805 28mm, medium
7962-2810 28mm, large
7962-2815 28mm, extra large
7962-3200 32mm, short
7962-3205 32mm, medium
7962-3210 32mm, large
7962-3215 32mm, extra large
7962-3600 36mm, short
7962-3605 36mm, medium
7962-3610 36mm, large
7962-3615 36mm, extra large

INSTRUMENTS CONTAINER 8007-7996

stem impactor
7512-2000

Aida® awl bowed
8007-1024

Aida® trial neck lateralised
8007-1040

Aida® trial neck standard
8007-1039

Aida® broach modular

8007-1000	size	0
8007-1011	size	1
8007-1012	size	2
8007-1013	size	3
8007-1014	size	4
8007-1015	size	5
8007-1016	size	6
8007-1017	size	7
8007-1018	size	8

INSTRUMENTS CONTAINER 7999-0800

acetabulum reamer solid section

7512-1746	Ø 46mm
7512-1748	Ø 48mm
7512-1750	Ø 50mm
7512-1752	Ø 52mm
7512-1754	Ø 54mm
7512-1756	Ø 56mm
7512-1758	Ø 58mm
7512-1760	Ø 60mm
7512-1762	Ø 62mm
7512-1764	Ø 64mm
7512-1766	Ø 66mm
7512-1768	Ø 68mm

cup impactor curved constrained
2950-0606

ic adapter with hexagon ball 8 mm
7512-3608

ic- T-handle Zimmer-Jakobs
4223-0023

offset handle for acetabulum reamer GIS®
7512-1700

INSTRUMENTS CONTAINER 8004-9001

Actinia® broach handle easy lock GIS®
8004-9030 right
8004-9035 left

cross bar tapered 10mm
7513-9999

coupled stem impactor
8004-9032

coupled stem impactor part 5
8004-903205

universal stem impactor
8004-9031

ic T-handle Zimmer-Jakobs
4223-0023

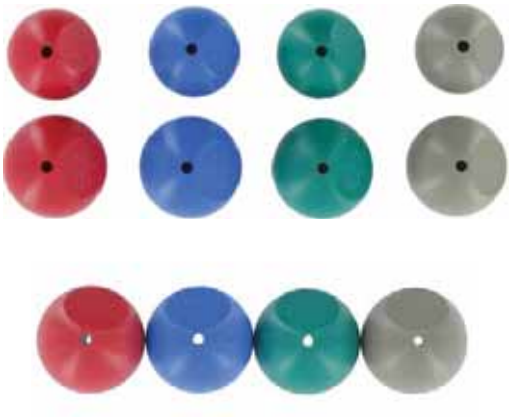
femoral reamer straight size 1
7516-0005

box chisel
7512-1099

Actinia® trial neck
8004-9028 standard
8004-9029 lateralised

trial head snap taper 12/14

7962-2800	28mm, short
7962-2805	28mm, medium
7962-2810	28mm , large
7962-2815	28mm, extra large
7962-3200	32mm, short
7962-3205	32mm, medium
7962-3210	32mm, large
7962-3215	32mm, extra large
7962-3600	36mm, short
7962-3605	36mm, medium
7962-3610	36mm, large
7962-3615	36mm, extra large



head impactor
7512-4444

INSTRUMENTS CONTAINER 7999-7049

EcoFit® broach

7039-3062	6,25mm
7039-3075	7,5mm
7039-3087	8,75mm
7039-3100	10mm
7039-3112	11,25mm
7039-3125	12,5mm
7039-3137	13,75mm
7039-3150	15mm
7039-3175	17,5mm

(The EcoFit® broach 20mm (REF 7039-3200) is available on request).

EcoFit® broach handle easy lock GIS®
7512-0048 right
7512-0049 left

cross bar tapered 10mm
7513-9999

ic T-handle Zimmer-Jakobs
4223-0023

femoral reamer straight size 1
7516-0005

box chisel
7512-1099

EcoFit® trial neck
7039-1214 standard
7040-1214 lateralised

head impactor
7512-4444

trial head snap taper 12/14

7962-2800	28mm, short
7962-2805	28mm, medium
7962-2810	28mm, large
7962-2815	28mm, extra large
7962-3200	32mm, short
7962-3205	32mm, medium
7962-3210	32mm, large
7962-3215	32mm, extra large

stem impactor
3039-0109

INSTRUMENTS CONTAINER 8006-7996

GIS® broach handle snap lock left
7512-0505

GIS® broach handle snap lock right
7512-0510

head impactor
7512-4444

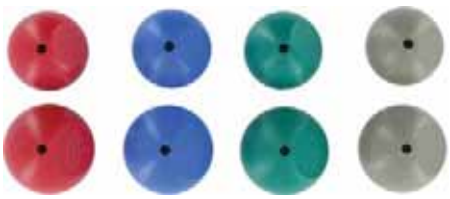
stem impactor
3039-0103

universal broach 5mm anatomic
8005-1605

box chisel
7512-1099

trial head snap, taper 12/14

7962-2800	28 mm, short
7962-2805	28 mm, medium
7962-2810	28 mm, long
7962-2815	28 mm, extra long
7962-3200	32 mm, short
7962-3205	32 mm, medium
7962-3210	32 mm, long
7962-3215	32 mm, extra long



INSTRUMENTS CONTAINER 8007-7997

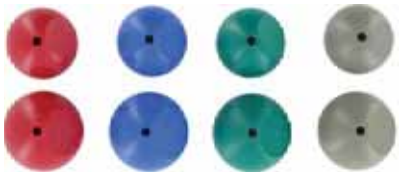
Aida® broach handle easy lock GIS®
7512-0014 right
7512-0015 left

Aida® trial neck
8007-1039 standard
8007-1040 lateralised

Aida® awl bowed
8007-1024

stem impactor
7512-2000

trial head snap taper, 12/14
7962-2800 28mm, short
7962-2805 28mm, medium
7962-2810 28mm, long
7962-2815 28mm, extra long
7962-3200 32mm, short
7962-3205 32mm, medium
7962-3210 32mm, long
7962-3215 32mm, extra long



Aida® broach modular
8007-1000 Größe 0
8007-1011 Größe 1
8007-1012 Größe 2
8007-1013 Größe 3
8007-1014 Größe 4
8007-1015 Größe 5
8007-1016 Größe 6
8007-1017 Größe 7
8007-1018 Größe 8

head impactor
7512-4444

INSTRUMENTS CONTAINER 0220-1136

trial shell

2950-2346	Ø 46mm
2950-2348	Ø 48mm
2950-2350	Ø 50mm
2950-2352	Ø 52mm
2950-2354	Ø 54mm
2950-2356	Ø 56mm
2950-2358	Ø 58mm
2950-2360	Ø 60mm
2950-2362	Ø 62mm
2950-2364	Ø 64mm
2950-2366	Ø 66mm
2950-2368	Ø 68mm

shell impactor
0282-0020

handle curved
7512-2202

positioner PE Liner 10°

0282-0003	Ø 28mm
0282-0004	Ø 32mm
0282-0036	Ø 36mm

impactor for cup insert

0282-0002	Ø 28mm
0282-0007	Ø 32mm
0282-0009	Ø 36mm

trial head snap taper, 12/14

7962-3600	36mm, short
7962-3605	36mm, medium
7962-3610	36mm, long
7962-3615	36mm, extra long

trial insert 0°

0225-2839	Ø 28/39mm
0225-3239	Ø 32/39mm
0225-3244	Ø 32/44mm
0225-3248	Ø 32/48mm
0225-3252	Ø 32/52mm
0225-3644	Ø 36/44mm
0225-3648	Ø 36/48mm
0225-3652	Ø 36/52mm

trial insert extractor
1260-0009

screw driver straight long 3,5mm
0280-1006

flexible screw driver 3,5mm
0270-1002

plug remover
0220-1011

angled drill guide 3,2mm
0282-1001

drill bit 3,2mm

0282-1005	56mm
0282-1070	70mm

flexible drill shaft
0282-1000

depth gauge
0282-1007

INSTRUMENTS CONTAINER 7999-7514

GIS® trochanter retractor
7512-0926

GIS® retractor narrow blunt
7512-0923

GIS® retractor wide
7512-0922

GIS® retractor narrow 2x
7512-0921

GIS® acetabulum retractor right
7512-0924

GIS® acetabulum retractor left
7512-0925

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