

From the «BioBall® Company»



OsteoBridge® Family



OsteoBridge® Diaphysis

The modular diaphyseal endoprosthesis for the long term stabilization of segmental bone defects and bone resections in humerus, femur and tibia

- For the treatment of:
- pathological fractures
 - bone defects
 - bone resections due to tumor

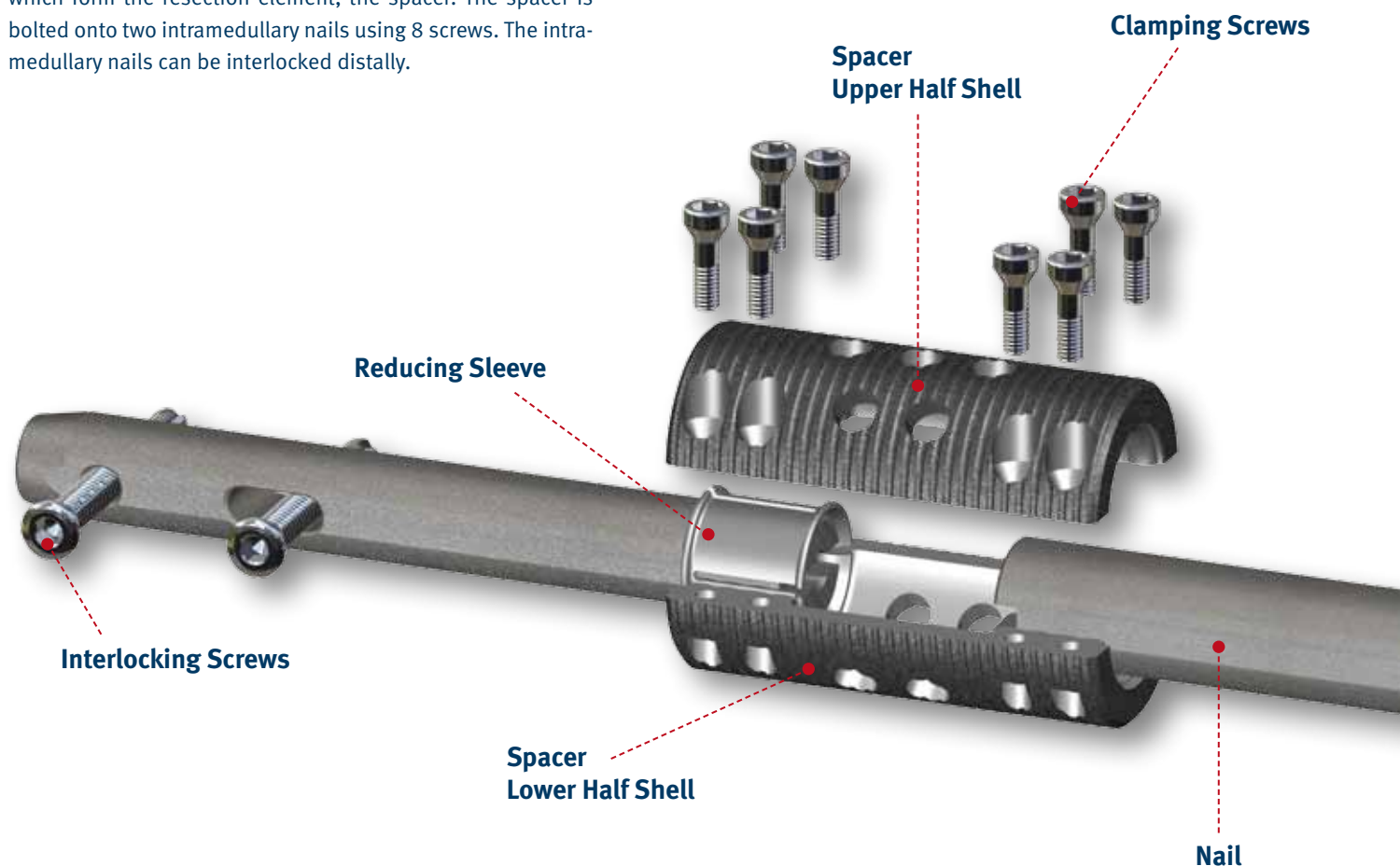


01. OsteoBridge® Diaphysis Spacer System

Concept

The OsteoBridge® Diaphysis is a modular diaphyseal endoprosthesis for the long term stabilization of segmental bone defects and bone resections in **humerus, femur** and **tibia**. The modular endoprosthesis consists of two semicircular shells, which form the resection element, the spacer. The spacer is bolted onto two intramedullary nails using 8 screws. The intramedullary nails can be interlocked distally.

All components are made of:



Advantages of OsteoBridge® Diaphysis

- ▶ Modularity of the system ensures flexible treatment
- ▶ Immediate mobility and analgesia possible
- ▶ Long term stability due to biological integration
- ▶ Hollow spacer shells can be used as carrier of antibiotics as well as bone graft for an active stimulation of bone growth
- ▶ Exact alignment due to stepless adjustability
- ▶ Cementless and cemented implantation possible

02. Indications



Dynamic interlocking possible



OsteoBridge® Diaphysis Indications

Long term stabilization of segmental bone defects due to:

- ▶ Bone tumors
- ▶ Osteomyelitis
- ▶ Trauma
- ▶ For risk patients with bone defects > 3 cm, who cannot be treated with a fixateur extern (e.g. due to high age, disabled or undisciplined patients and/or unacceptable impairment of the quality of life)
- ▶ For non-healed fractures after osteosynthesis or revision arthroplasty

03. Service Package for Surgical Assistance

Preoperative Planning

The surgeon will be provided with a preoperative planning including a selection of necessary implants based on the patient's x-rays.

Supply

For the first surgeries all necessary implants and instruments will be provided on a loan basis.



In-House Training

Before surgery a Merete product specialist will demonstrate the use of the instruments and implants. In addition the variable applications of the implant will be shown.

Surgical Assistance

A Merete product specialist will assist the operating team to assemble implants and instruments during surgery.

04. Surgical and X-Ray Images

Tumor Case Studies:

► Tumor 1

Metastasis of a renal carcinoma



6 months postoperatively

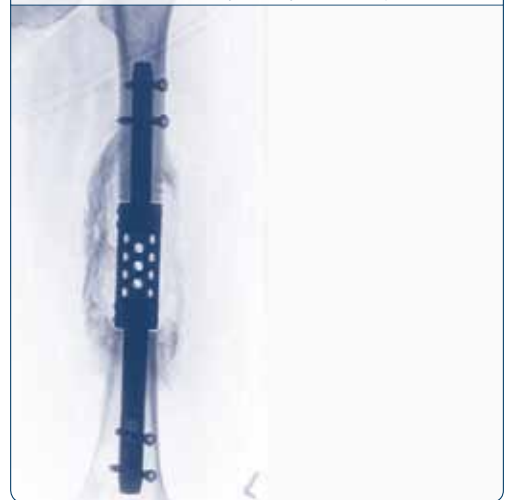


► Tumor 2

Pathological fracture



6 months postoperatively



► Tumor 3

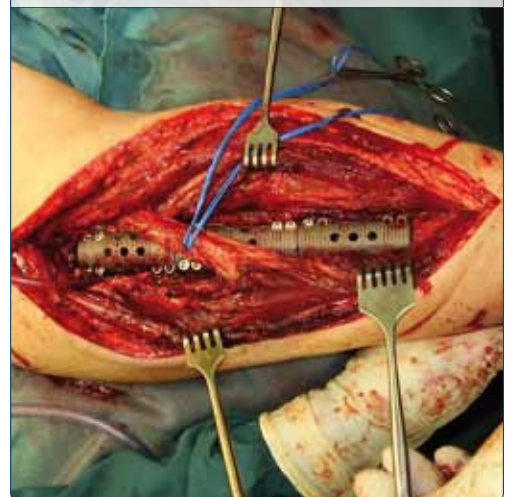
Metastasis of a renal carcinoma



1 week postoperatively



Bridging 190 mm



Surgical and X-Ray Images

Infection Case Studies:

► Case 1



► Case 2



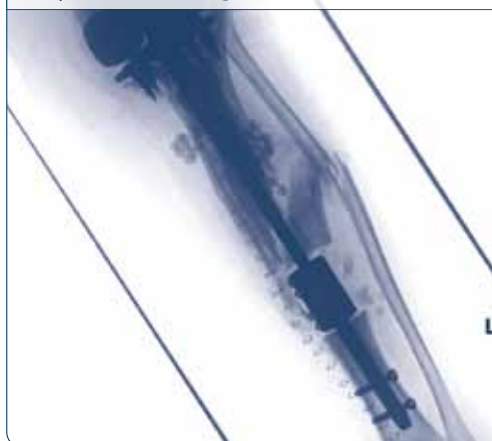
Surgical and X-Ray Images

Special Case Studies:

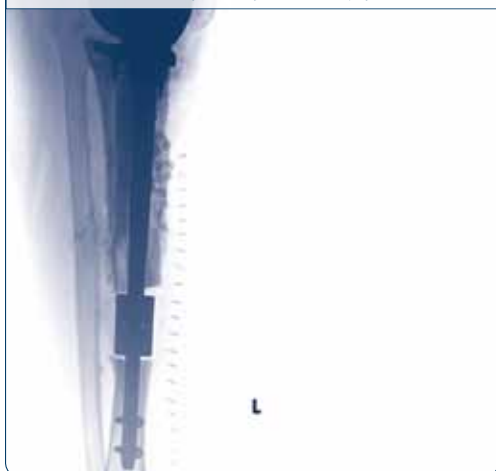
Pseudarthrosis after fracture of the tibia



Treatment with OsteoBridge® Diaphysis as the replacement of a knee prosthesis was not possible due to general internistic reasons



Walking with a walking aid in the domestic environment postoperatively possible

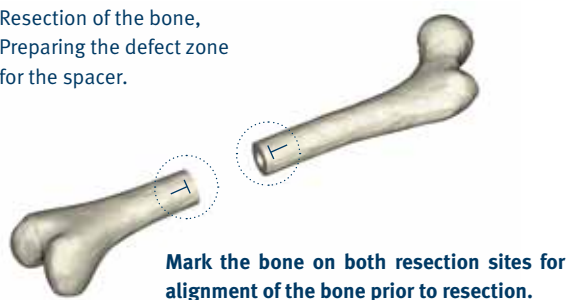


Merete Medical GmbH likes to thank for the kind supply of the x-ray images:

PD Dr. med. R.-A. Laun, Vivantes Neukölln, Berlin
Prof. Dr. med. C. Lohmann, Uniklinikum Hamburg-Eppendorf
Prof. Dr. med. D. C. Wirtz, Uniklinikum Bonn
Prof. Dr. med. T. Mischkowsky, Klinikum Kempten
Prof. Dr. med. L. Rabenseifner, Stadtklinik Baden-Baden
PD Dr. med. R. Wirbel, St. Elisabeth Krankenhaus Wittlich

05. Device Application

- 1** Resection of the bone,
Preparing the defect zone
for the spacer.



- 2** Guiding instrument with
mounted nail for cement-
less implantation.



- 3** Nail implanted, trocar inserted
into protection sleeve.



- 4** Drilling of the holes
and inserting the
interlocking screws

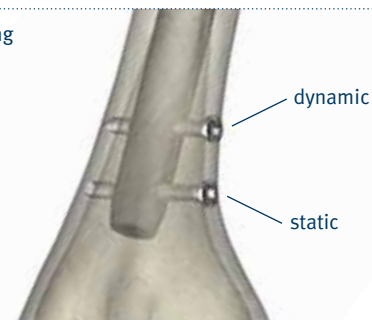
Drill bit: Ø 3.2 mm
for screws Ø 3.8 mm
Drill bit: Ø 4.5 mm
für screws Ø 5.0 mm



- 5** Defining the screw
length using the
depth gauge.



- 6** Dual interlocking



- 7** Mounting of the reducing sleeve on the nail. Reducing sleeves
are needed if the nail diameter does not correspond with the
diameter of the spacer (see page 10).



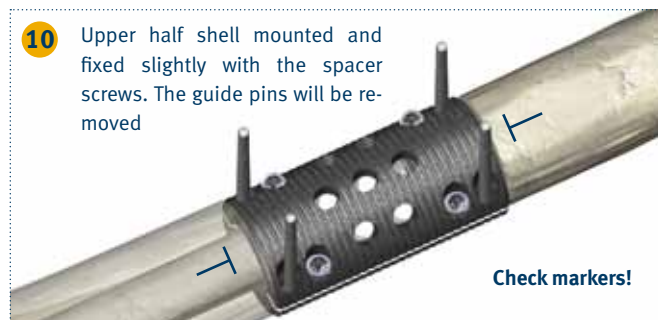
- 8** First half shell premounted
from dorsal



- 9** Setting of four guide pins to cen-
ter the second half shell



- 10** Upper half shell mounted and
fixed slightly with the spacer
screws. The guide pins will be re-
moved



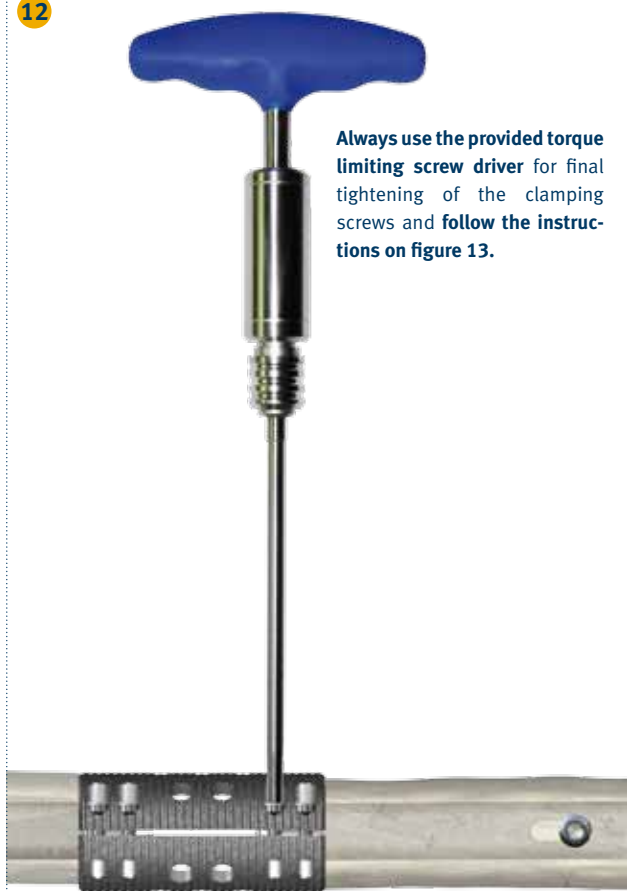
Device Application

Please take note of the following steps to clamp the spacer!

- 11** Regard the parallel alignment of the two spacer half shells. Tighten the spacer screws **only when** the spacer half shells are aligned **parallel** to each other (constant gap).



- 12** Always use the provided torque limiting screw driver for final tightening of the clamping screws and follow the instructions on figure 13.



13

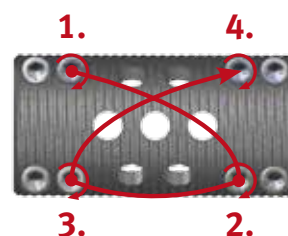
ATTENTION!

Tightening of the spacer screws has to be carried out according to a specific procedure which avoids the unbalanced clamping of the spacer:

Beginning with screw 1, the screws must be tightened crosswise in strict rotation. Start with the inner four screws; afterwards tighten the outer four screws. When torque is reached the torque limiting screw driver overwinds accompanied by a „click“.

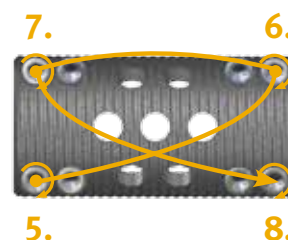
Inside

First tighten the **inner four clamping screws** in the given order!



Outside

Afterwards tighten the **outer four clamping screws** in the given order!



The tightening procedure must be performed **at least three times!**

Spacer Connectors - For large Bone Defects

- 14** If a bone defect larger than 70 mm has to be bridged, two spacers can be combined with a spacer connector (see page 12). The spacer half shells are tightened on the connector. The screws have to be tightened in the described way as demonstrated on fig. 12/13. It is recommended to completely tighten one spacer first before tightening the second.



06. Spacer and Reducing Sleeves

ATTENTION! Individual spacers have **different inside diameters**. In order to be able to combine the spacer with smaller diameter nails, corresponding reducing sleeves are provided. Pay attention to the right combination:

SPACER → REDUCING SLEEVE → NAIL

The product packaging is colour coded accordingly.

Spacers are provided sterile and include the clamping screws.



Recommended for Humerus:

Spacer Ø 20 mm
(Inner Ø 10 mm)
incl. Clamping Screws



Length	Ref. sterile
40 mm	GB02004
50 mm	GB02005
60 mm	GB02006
70 mm	GB02007

Can be combined with nails:

Ø 7, 8, 9, 10 mm



Corresponding Reducing Sleeves

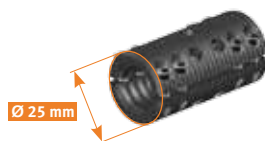


Ø Nail/ Ø Spacer	For Nail	Ref. sterile
7/20	Ø 7 mm	GB21007
8/20	Ø 8 mm	GB21008
9/20	Ø 9 mm	GB21009
10/20	Ø 10 mm	No sleeve



Recommended for Tibia:

Spacer Ø 25 mm
(Inner Ø 14 mm)
incl. Clamping Screws



Length	Ref. sterile
40 mm	GB02504
50 mm	GB02505
60 mm	GB02506
70 mm	GB02507

Can be combined with nails:

Ø 8, 9, 10, 12, 14 mm



Corresponding Reducing Sleeves

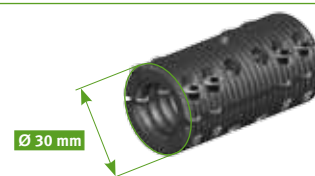


Ø Nail/ Ø Spacer	For Nail	Ref. sterile
8/25	Ø 8 mm	GB21408
9/25	Ø 9 mm	GB21409
10/25	Ø 10 mm	GB21410
12/25	Ø 12 mm	GB21412
14/25	Ø 14 mm	No sleeve



Recommended for Femur:

Spacer Ø 30 mm
(Inner Ø 16 mm)
incl. Clamping Screws



Length	Ref. sterile
40 mm	GB03004
50 mm	GB03005
60 mm	GB03006
70 mm	GB03007

Can be combined with nails:

Ø 10, 12, 14, 16 mm



Corresponding Reducing Sleeves

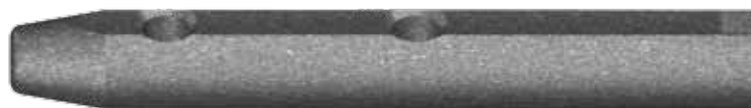


Ø Nail/ Ø Spacer	For Nail	Ref. sterile
10/30	Ø 10 mm	GB21610
12/30	Ø 12 mm	GB21612
14/30	Ø 14 mm	GB21614
16/30	Ø 16 mm	No sleeve

Nails & Interlocking Screws



Small Nails / non sterile



Large Nails / non sterile

Recommended for Humerus: Spacer Ø 20 mm			Recommended for Tibia: Spacer Ø 25 mm			Recommended for Femur: Spacer Ø 30 mm		
Length	Ø 7 mm	Ø 8 mm	Length	Ø 9 mm	Ø 10 mm	Ø 12 mm	Ø 14 mm	Ø 16 mm
60 mm	GB10706	GB10806	60 mm	GB10906	GB11006	/	/	/
70 mm	GB10707	GB10807	70 mm	GB10907	GB11007	GB11207	/	/
90 mm	GB10709	GB10809	90 mm	GB10909	GB11009	GB11209	GB11409	/
110 ¹ mm	/	/	110 ¹ mm	/	GB11011	GB11211	GB11411	GB11611
130 ¹ mm	/	/	130 ¹ mm	/	GB11013	GB11213	GB11413	GB11613
150 ¹ mm	/	/	150 ¹ mm	/	/	GB11215	GB11415	GB11615
200 ¹ mm	/	/	200 ¹ mm	/	/	/	GB11420	GB11620

¹ for dynamisation

¹ for dynamisation

Small interlocking screws

Ø 3.8 mm²

For small nails Ø 7 and 8 mm

Length	Ref. non sterile
18 mm	GB33818
20 mm	GB33820
22 mm	GB33822
24 mm	GB33824
26 mm	GB33826
28 mm	GB33828
30 mm	GB33830
32 mm	GB33832

² Drill bit: Ø 3.2 mm



The colour coding on the product packaging facilitates the allocation.

Large interlocking screws

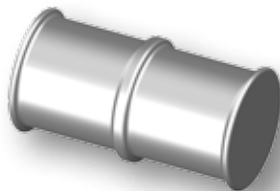
Ø 5.0 mm³

For large nails Ø 9, 10, 12, 14, 16 mm

Length	Ref. non sterile
20 mm	GB35020
22 mm	GB35022
24 mm	GB35024
26 mm	GB35026
28 mm	GB35028
30 mm	GB35030
32 mm	GB35032
34 mm	GB35034
36 mm	GB35036
38 mm	GB35038
40 mm	GB35040
42 mm	GB35042
44 mm	GB35044
46 mm	GB35046
48 mm	GB35048
50 mm	GB35050
52 mm	GB35052
54 mm	GB35054
56 mm	GB35056

³ Drill bit: Ø 4.5 mm - Special lengths available on request

Spacer Connector & Sterilization Tray

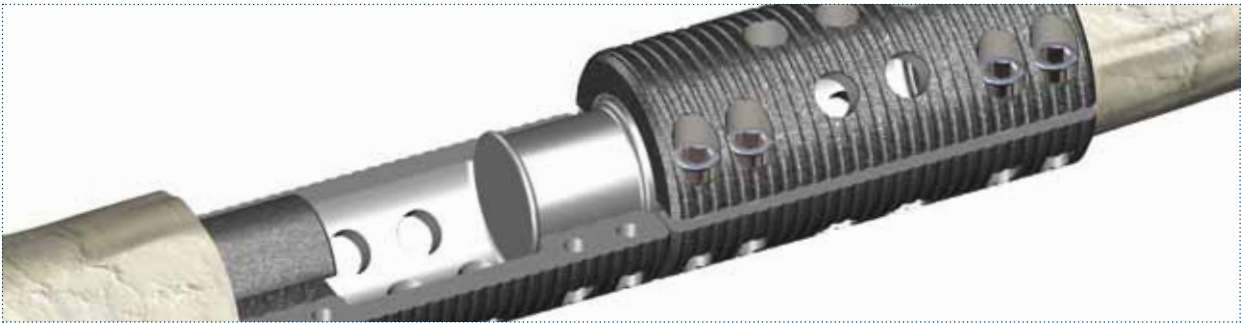


Spacer Connector

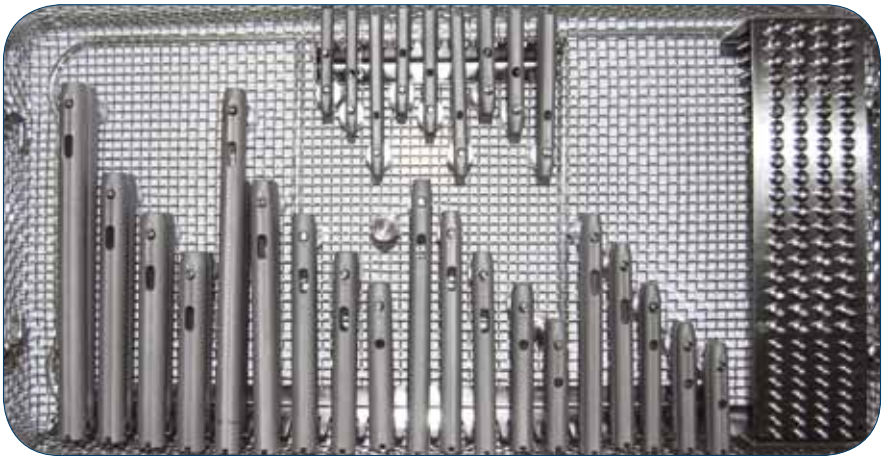
For Spacer	Ref.
Ø 20 mm	GB40020
Ø 25 mm	GB40025
Ø 30 mm	GB40030

Extension

The largest spacer has a length of 70 mm. For larger resections spacers can be connected with the spacer connector.

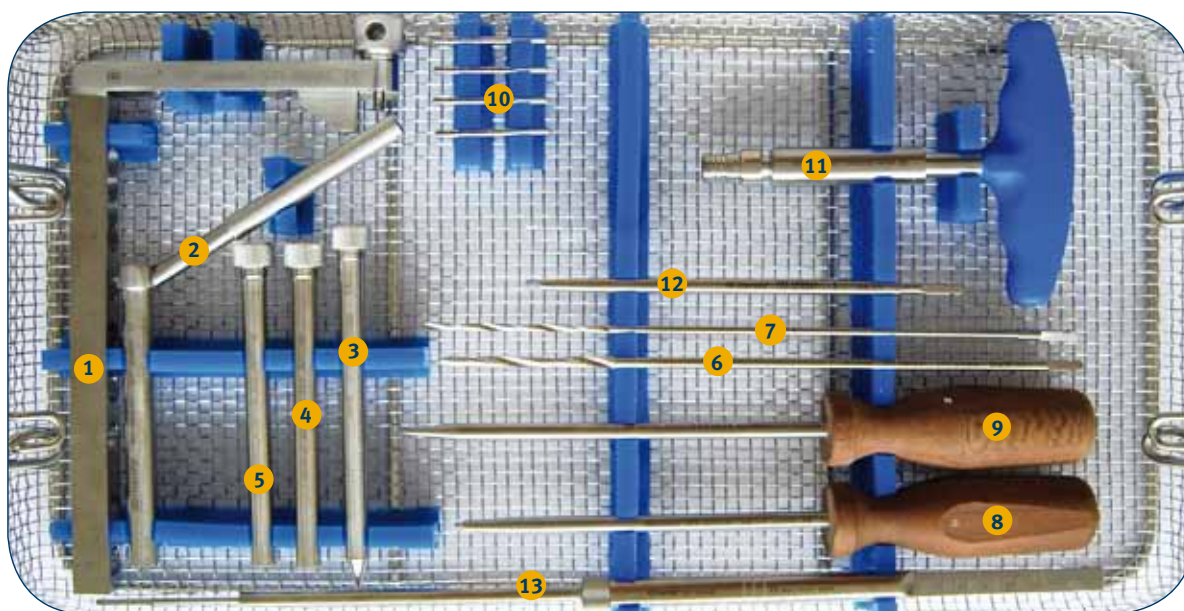


OsteoBridge® Sterilization Tray



Description	Ref.
Sterilization tray (with 2 nails each and 4 screws each)	GB90001

07. Instruments



Description	Ref.
Sterilization tray with 1 instrument each	GB90000

Single Instruments

Description	Ref.
1 Nail guiding/impacting instrument	GB90100
2 Protection sleeve	GB90101
3 Trocar	GB90102
4 Drill sleeve for drill bit Ø 3.2 mm	GB90132
5 Drill sleeve for drill bit Ø 4.5 mm	GB90145
6 Drill bit Ø 3.2 mm (for interlocking screws Ø 3.8 mm)	GB90232
7 Drill bit Ø 4.5 mm (for interlocking screws Ø 5.0 mm)	GB90245
8 Screw driver hex 2.5 (for interlocking screws Ø 3.8 mm)	AI00125
9 Screw driver hex 3.5 (for interlocking and clamping screws Ø 5.0 mm)	AI00135
10 4 Guide pins to center the second half shell	GB90200
11 Torque limiting screw driver for the spacer screws	GB90205
12 Screw driver hex 3.5 with AO-coupling (for clamping screws)	GB90204
13 Depth gauge	AI00200
14 Steel ruler 300 mm	AI90300

08.

OsteoBridge® Family

OsteoBridge® Knee Arthrodesis

The OsteoBridge® Knee Arthrodesis is a modular system which is used for the fusion of the knee joint after failed primary knee arthroplasty.
Please ask for our brochure.

From the «BioBall® Company»



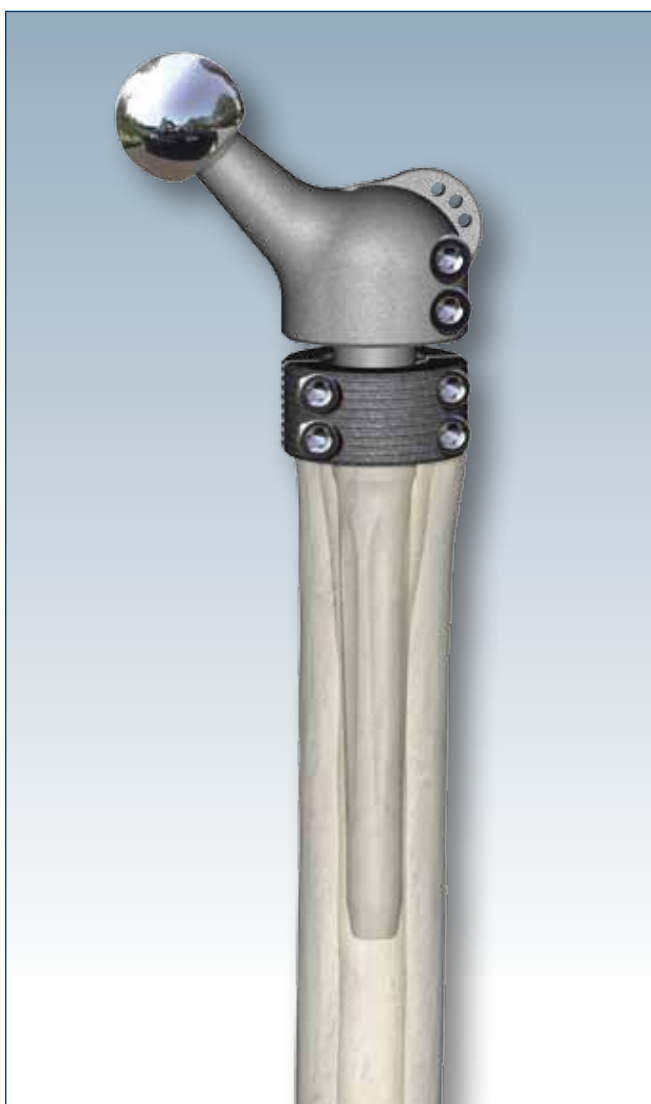
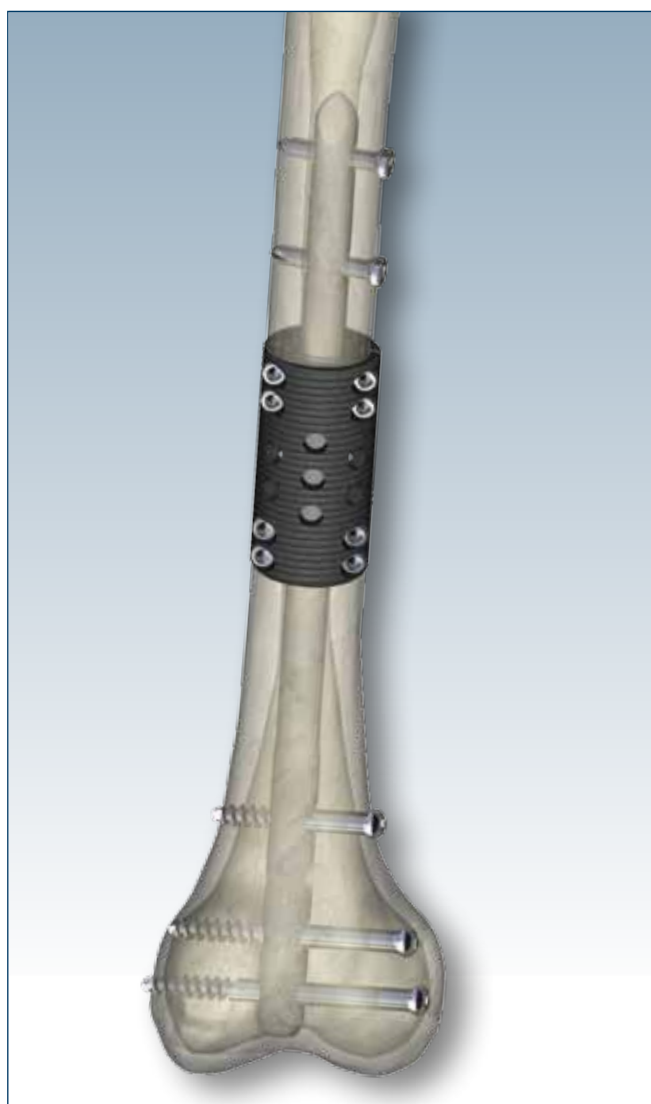
OsteoBridge® Knee Arthrodesis
The modular system for the fusion of the knee joint



merete®
CONFIDENCE IN GERMAN ENGINEERING
CE

OsteoBridge® Family

Product Forecast - Development in Progress

OsteoBridge® Resection Hip Prosthesis**OsteoBridge® Metaphyseal Supply**

Merete Medical GmbH

Alt-Lankwitz 102

12247 Berlin · Germany

Phone: +49 (0)30 77 99 80-0

Fax: +49 (0)30 76 68 03 61

service@merete.de

www.merete.de

