



Hyperion™

Modular Revision Hip System

Product Information and Operative Technique

The Hyperion Revision Hip System was developed with 3 guiding principles Simplicity, Flexibility & Safety.

Simplicity: A 5 tray system capable of tackling all but the most severe situations encountered during revision hip surgery. Simple transition between stem styles and an in-situ build facility making for easy assessment of a broad range of defects.

Flexibility: The Hyperion system has an impressive array of distal stem lengths, lateralised proximal offsets, extension sleeves and distal locking options giving the practitioner the tools to take a uncompromised approach to revision surgery.

Safety: The taper junction and many of the basic design features are taken from the Helios™ hip system of which over 10,000 have been implanted with no reported stem fractures. This ensures that users of the Hyperion™ System can be confident that the system they have chosen is based on proven clinical experience with the advanced features of a modern modular revision system.

At Biomet® we pride ourselves on our innovative use of technology and in the Hyperion System Biomet® has chosen to pair our clinically proven (Titanium alloy) plasma porous coating with Bonemaster™, an electrolytically applied nano-crystalline hydroxyapatite. The super thin nature of the Bonemaster coating enables the porous sprayed proximal bodies to retain their large surface area and scratch fit potential conferring excellent primary fixation and ingrowth with an auto-graft effect.

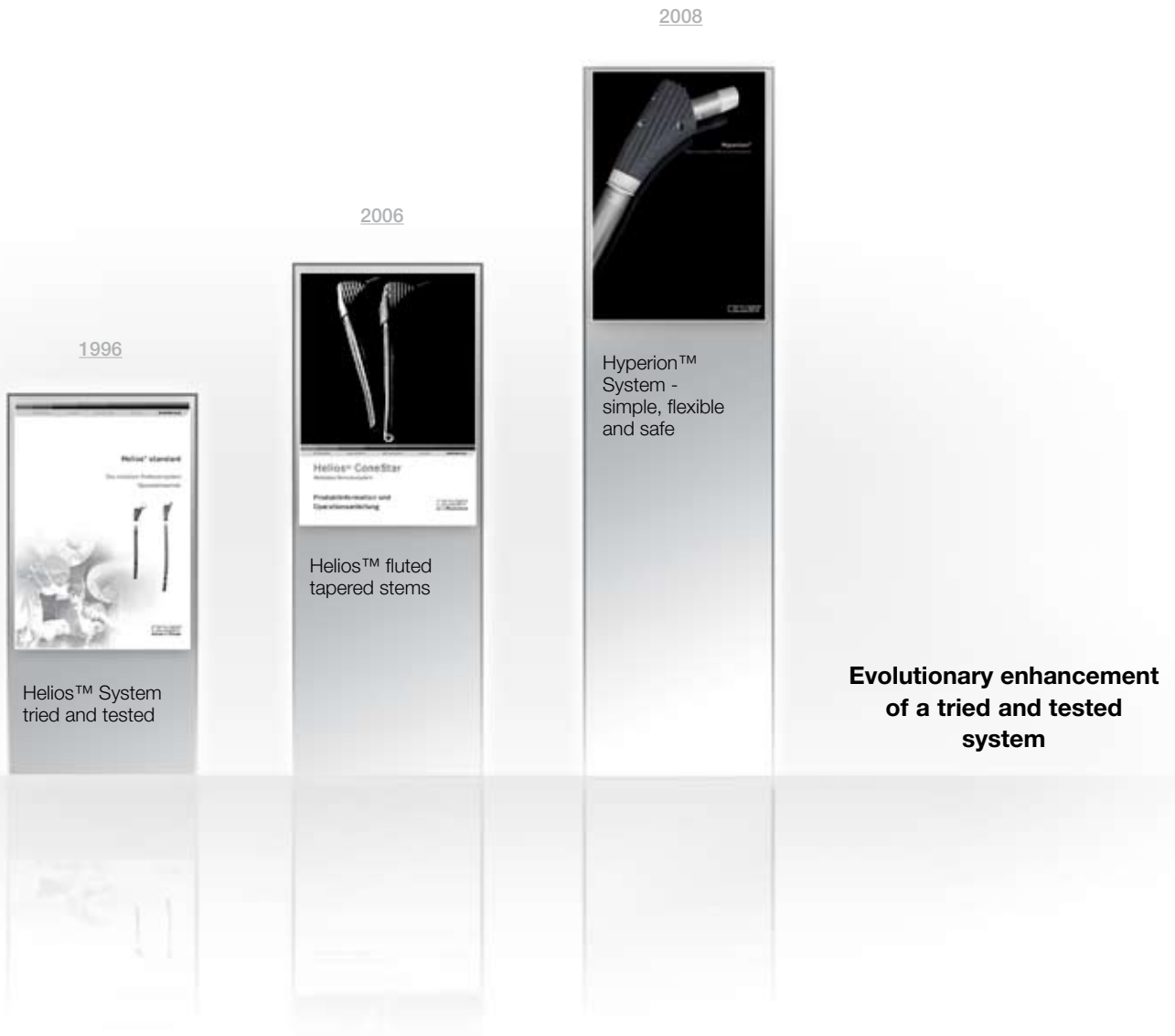
This publication and all content, artwork, photographs, names, logos and marks contained in it are protected by copyright, trademarks and other intellectual property rights owned by Biomet Deutschland GmbH or its affiliates or licensed to Biomet Deutschland GmbH or its affiliates. This brochure must not be used, copied or reproduced in whole or in part for any purposes other than marketing by Biomet® Deutschland GmbH or its authorised representatives. Any other purposes are prohibited. Biomet Deutschland GmbH, as the manufacturer of this device, does not practice medicine and does not recommend any particular orthopaedic implant or surgical technique for use on a specific patient. The surgeon who performs any implant procedure is responsible for determining and utilising the appropriate techniques for implanting prosthesis in each individual patient.

Biomet® Deutschland GmbH is not responsible for selection of the appropriate orthopaedic implant or surgical technique, nor does it advocate a particular technique to be utilised on an individual patient

Contents

The modular Revision Hip System	Assembly and implantation of the Hyperion system
Introduction 4	Assembly of the Hyperion system 20
Indications 5	Option 1:
Stem dimensions 6	In situ assembly 22
Defect classification - System guide 8	Implanting the Hyperion 22
Operation preparation	Trial assembly and reduction 23
Pre-operative planning 10	Use of the proximal mill 23
Determining implant size 10	Stem assembly and trialling 24
Use of X-ray templates 11	Shear bolt insertion 24
Optimum press-fit 12	Taper engagement 25
Use of Metaphyseal (fluted tapered) stems	Option 2:
Operative Planning 14	On table assembly 26
Preparation with flexible reamers 14	Stem assembly 26
Preparation with conical reamers 14	Taper engagement - on table 27
Rasping of the proximal femur 15	Taper engagement - in-situ 27
Use of Diaphyseal (cylindrical / keel type) stems	Prosthesis implantation
Operational steps 17	Hyperion implantation 28
Preparation with flexible reamers 17	Trial reduction with definitive implant 28
Preparation with metaphyseal rasps 18	Head impaction 29
Final femoral preparation 19	Distal locking 29
	Hyperion – Removal of the prosthesis system
	Removal of the Hyperion 30
	Disassembling components 31
	Compatible BIOMET products
	Freedom™ 32
	Regenerex™ 33
	Order information 34

Hyperion™ – Modular Revision Hip System



Introduction

Historically total hip replacement was the most common joint replacement performed, in recent years the indication and application for total hip reconstruction has increased dramatically as people are living longer and desiring earlier treatment. As a result the number of patients presenting for revision or presenting early with problems such as septic, aseptic loosening and peri-prosthetic fracture is increasing accordingly.

Biomet® was founded by engineers as a small innovative company back in 1977 and has accrued extensive experience in the field of implant development with development sites and manufacturing plants in Spain, France, UK, USA and Germany. Since 1996 our Berlin facility has focussed on the development of a modular revision hip system and the Hyperion is the culmination of that effort.

Simple -

Well thought out instruments with intuitive work flow & tray layout

Flexible -

Suitable for Paprosky defects type II to IIB - IV

Safe -

Tried and tested quality developed in Germany



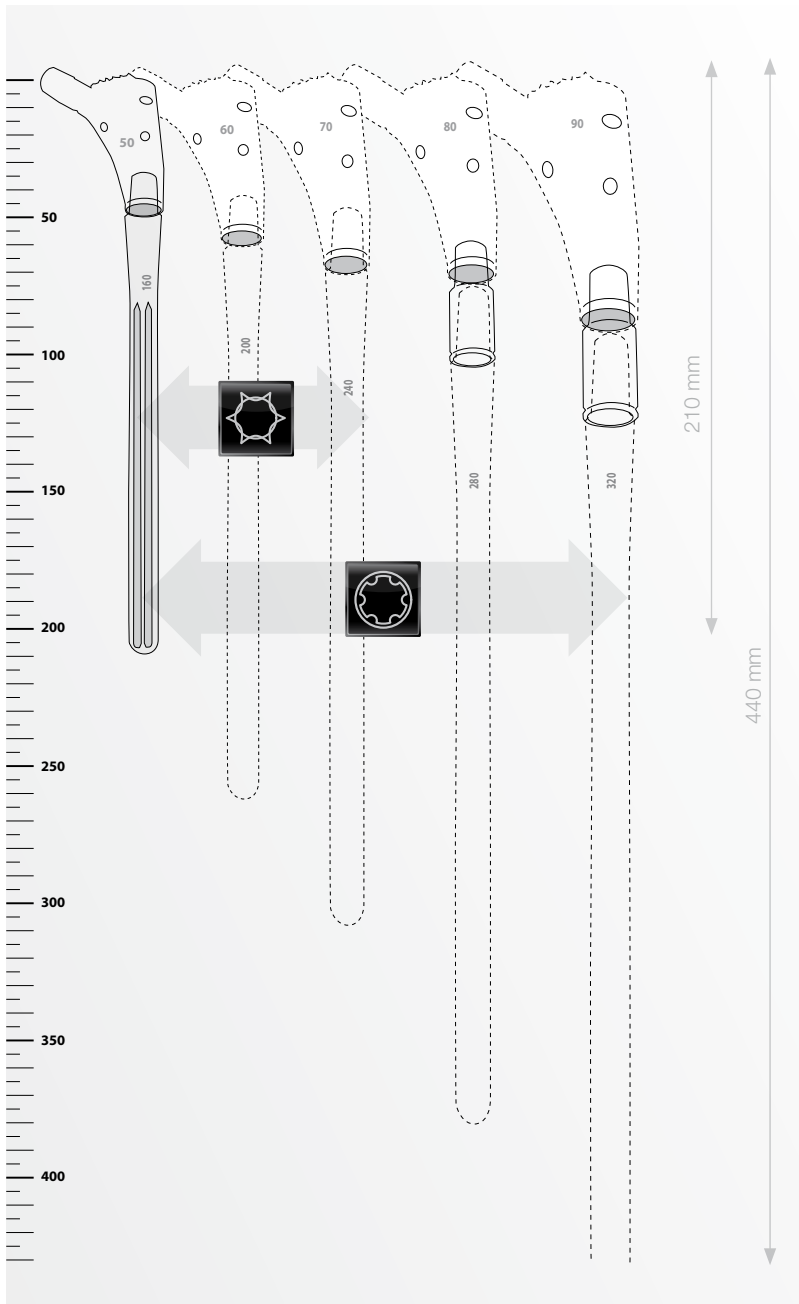
The ethos behind the Hyperion system was to deliver a system which enables increased intra-operative flexibility over a broad range of indications without compromising the reliability of the implant.

The **Hyperion** is a fully modular cementless revision hip system which features two proximal body options with both standard and lateralised variants in either a grit blast or **Bonemaster™** and porous coating, enabling their use in a wide range of indications.

Indications

- Hip revision
- Peri-prosthetic fracture
- Aseptic loosening
- Infection
- Femoral neck fracture
- Per-trochanteric femoral fracture
- Pathological fracture

Hyperion™ – Modular Revision Hip System



Stem option matrix

All modular components are interchangeable intra-operatively. The Hyperion system can be assembled to provide total stem lengths ranging from 210 mm up to 440 mm.



Distal locking holes
Allow for additional stabilisation with 4.5 mm titanium screws for all stems from 200 mm in length & 12mm in diameter.



Hyperion diaphyseal distal stems
The Hyperion system has fluted tapered stems for optimal diaphyseal fixation.



System Canulation
Total canulation of all intramedullary instruments and components for the use of guide wires.

Offset proximal bodies
Hyperion proximal bodies are available in standard and lateralised variants.



Hyperion™ metaphyseal distal stems
Hyperion metaphyseal distal stems. The Hyperion system has cylindrical grit blast distal stems for keel fixation and metaphyseal loading.



Anteversion
Anteversion: Can be dialled in to suit individual patient need.

Safe taper junctions
Tried and tested in over 10,000 Helios implantations throughout Europe.



Proximal cerclage wire holes
Provide extra fixation options proximally especially in cases of four part fracture.

25 mm and 30 mm
Extension sleeves assist in the flexible adjustment of the overall length of the implant, during the procedure.

Variable unit lengths up to 440 mm
Modular components allow a potential total stem length of up to 440 mm.

Bonemaster™
The patented nano-crystalline HA coating ensures optimal bone in-growth.

Hyperion™ – Modular Revision Hip System

Defect Type II



Defect Type IIIa



Paprosky¹ classification & recommended Hyperion stem solution



Defect type II according to Paprosky

Characteristic:

Comprised Metaphysis: over than 4cm undamaged bone in the diaphysis.

Recommendation:

Diaphyseal stem type (Fluted)



Defect type IIIa according to Paprosky

Characteristic:

Extensive metaphyseal defect: over than 4cm undamaged bone in the diaphysis.

Recommendation:

Diaphyseal stem type (Fluted) - if necessary with distal locking.

Defect Type IIIb



Defect Type IV



Defect type IIIb according to Paprosky

Characteristic:

Extensive metaphyseal defect: less than 4 cm of undamaged bone in the diaphysis.

Recommendation:

Diaphyseal stem type (fluted), if necessary with distal locking.



Defect type IV according to Paprosky

Characteristic:

Extensive metaphyseal & diaphyseal bone defects associated with an enlarged femoral canal.

Recommendation:

Diaphyseal stem type (fluted), if necessary with distal locking. Alternative options should be made available such as a salvage device / total femur for in extreme cases. See your local area representative for information on the Biomet® Orthopaedic Salvage System (OSS).



Pre-operative planning with the aid of the Hyperion X-ray templates

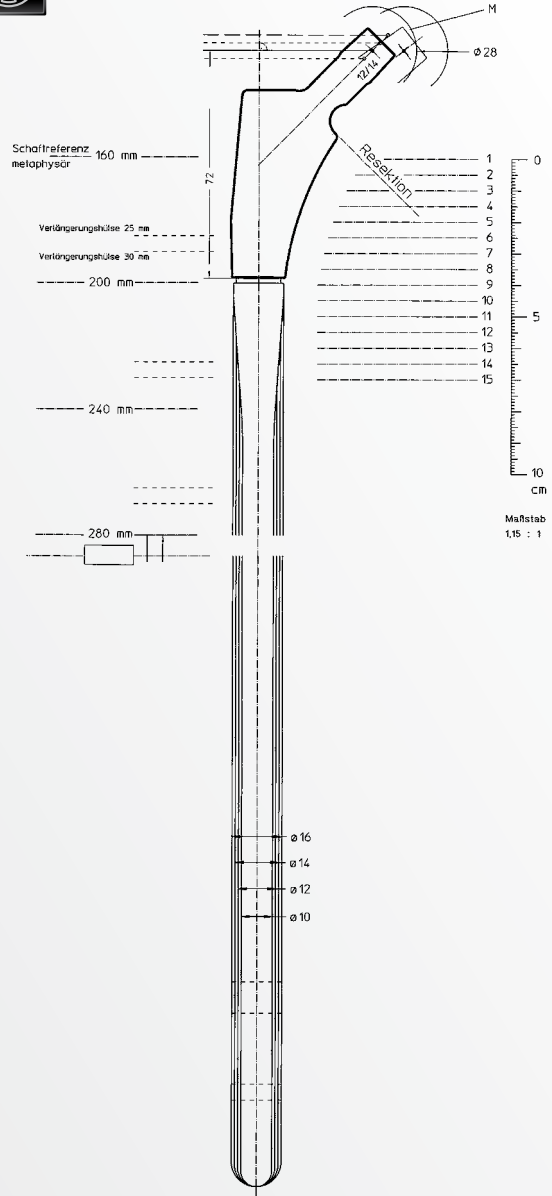
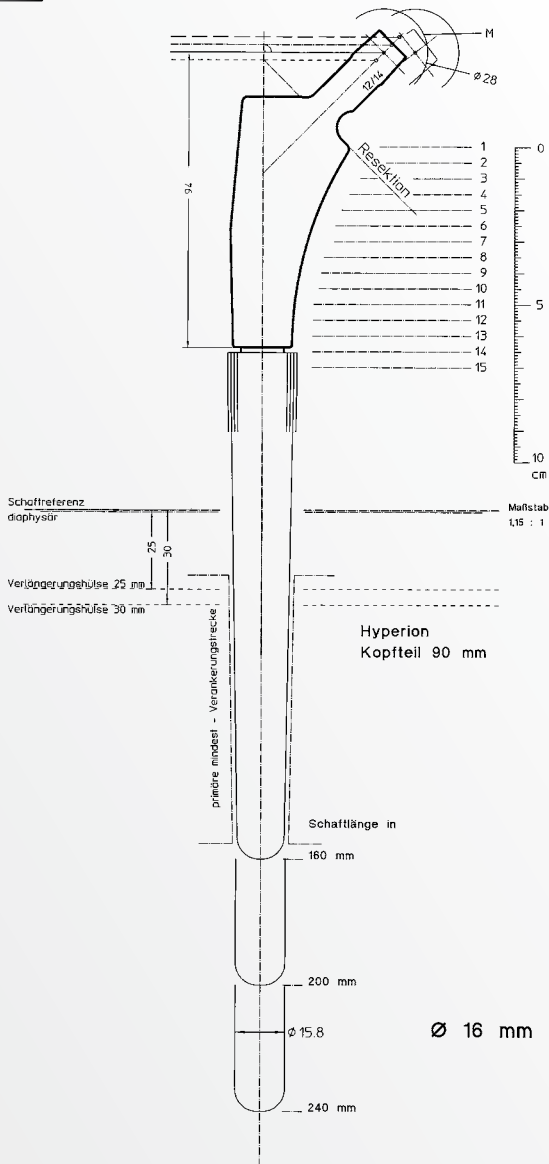
First select the appropriate distal stem option diaphyseal (fluted) or metaphyseal (cylindrical / keel). Proximal body and distal stem templates have easy slide over reference points and are independent to allow full proximal & distal inter-changeability when templating.

Pre-operative planning

Full leg length radiographs of the femur and the diaphysis allow pre-operative determination of the required stem length for the Hyperion system. The provisional implant sizes for the proximal body, the distal stem length and the stem diameter of the two different distal stem options are determined via the use of X-ray templates.

Determining implant size

The appropriate length of the distal stem is determined during preoperative planning. The stem diameter must be adapted to the condition and the size of the femoral canal. The stem length should bridge the most distal part of the defect by two and a half times the diameter of the canal and ensure optimal circumferential contact along the length of the femur to enable good distal fixation. In order to optimise bone in-growth, load transfer and secondary fixation, please ensure that good metaphyseal contact is achieved where ever possible.



Use of the X-ray templates

Proximal body size, distal stem diameter and length should be gauged via use of the X-ray templates.

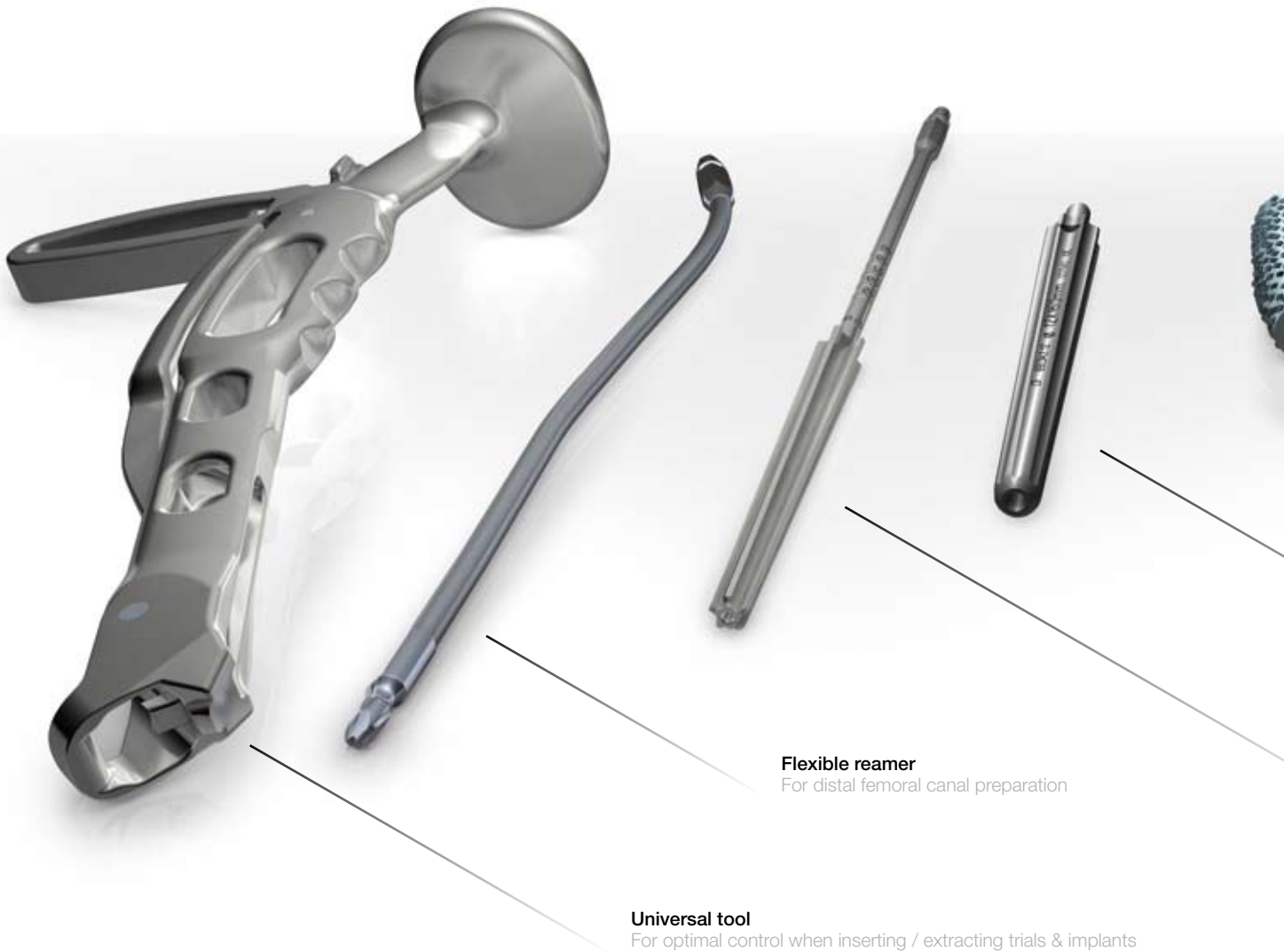
Particular emphasis should be paid to the amount of potential cortical contact when using the X-ray templates for the diaphyseal stem.

In order to guarantee primary stability at least 2/3 of the conical section of the diaphyseal stem must be in contact with bone suitable for load-bearing.

When using the metaphyseal distal stems particular emphasis should be paid to the optimum seating of the proximal bodies. For metaphyseal stem implantation please see page 16.



Hyperion™ – diaphyseal fixation



Flexible reamer
For distal femoral canal preparation

Universal tool
For optimal control when inserting / extracting trials & implants



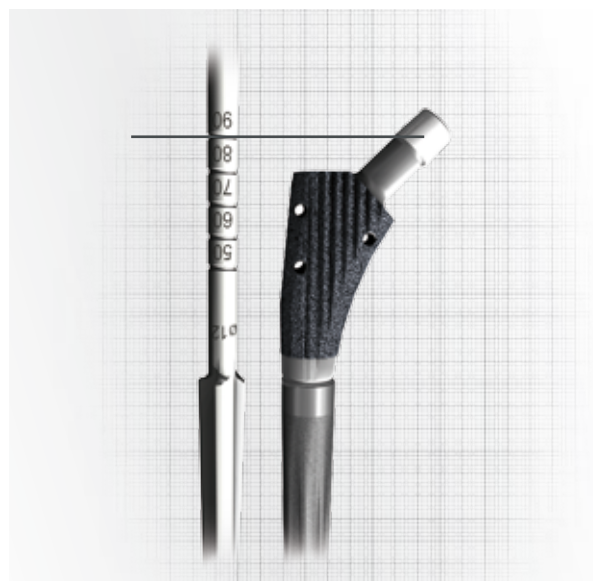
Optimum press-fit

Should further preparation of either the proximal or distal femur be required. Then care should be taken to ensure that an optimum press-fit is achieved by both components.



Instrument tray configuration

The layout of the instrument trays follows the operational steps and is designed to be intuitive. Colour coding simplifies the identification of the respective instrument tray intra-operatively.



Markings

Reference - 90 mm proximal body and the reamer position.

Relationship between final reamer and final implant position:

As with all revision surgery, to ensure the best possible outcome fixation should be sought in areas with the best quality bone stock. The penetration depth and thus the press-fit of the diaphyseal Hyperion implant in the femoral cortical bone is crucial to its primary stability.

When preparing the intra-medullary canal the implant diameter to reamed diameter is 1:1. For instance, a 12mm ream requires a 12mm diaphyseal Hyperion stem. A theoretical press-fit of 0.0 mm is produced. By driving in of the Hyperion prosthesis stem by a further 5 mm from the neutral position produces an increase of 0.2 mm in section diameter and thus optimises the press-fit. When using bowed stems 3 point cortical contact through the bow of the femur will further augment fixation.

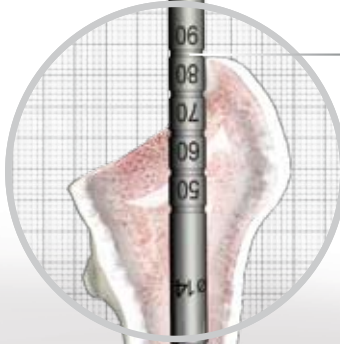


1



Tip:

After preparing the canal replace the olive tipped guide wire for one without an olive tip. The diameter of the guide wire should not be greater than 3.6 mm.



2

Insertion of the conical reamer

The size of the reamer may help in selecting the appropriate proximal body size.

Reamer size

Begin preparation with the smallest reamer; the final reamer corresponds to the diameter of the Hyperion stem.



1 Preparation with flexible reamers:

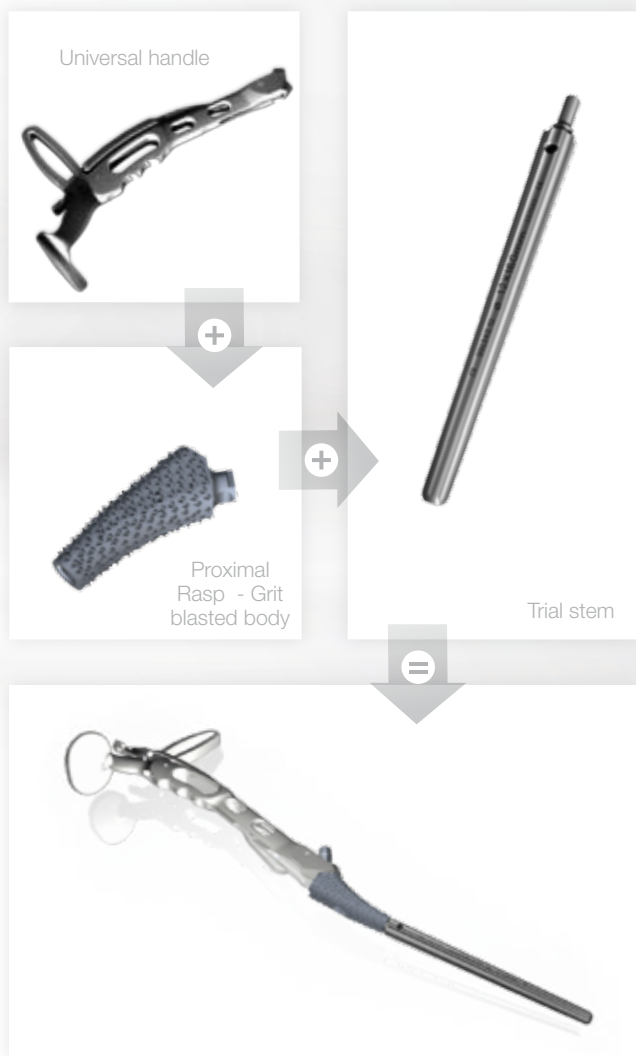
To begin preparation of the distal intra-medullary canal start with the smallest flexible reamer available, this must be at least 2 mm smaller than that of the Hyperion stem pre-operatively indicated by x-ray templating. Flexible reaming should be carried out to a depth corresponding to the length of distal stem again determined pre-operatively.

Flexible reaming with modular reamers should always be performed using a guide wire with an olive tip.

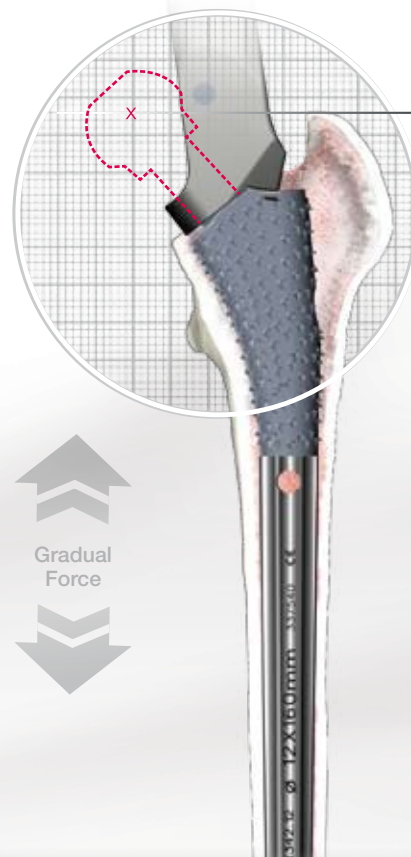
2 Preparation with conical reamers:

Once distal reaming is complete diaphyseal preparation can commence. Begin preparation with the smallest reamer, the final reamer corresponds to the diameter of the diaphyseal (fluted) Hyperion stem. Advance the reamer until the mark corresponding to the proximal body size selected is parallel to the tip of the greater trochanter.

Preparing for preparation



3



Proximal Trialling

50mm & 60mm Proximal bodies are available in STD offset only. 70mm and above bodies are available in STD and LAT bodies.

Trial Head Trial neck

(+)

3 Rasping of the proximal femur

To perform the proximal femoral preparation connect the smallest proximal rasp to a suitable trial stem and then to the universal handle. Sequentially rasp until the desired rasp size is reached. Preparation of the proximal femur is completed when the proximal rasp size matches the implant size determined pre-operatively and correct femoral component positioning with respect to version is achieved. The provisional position of the implant and the function of the joint can be trialled at this stage.

Assembly of the Hyperion system

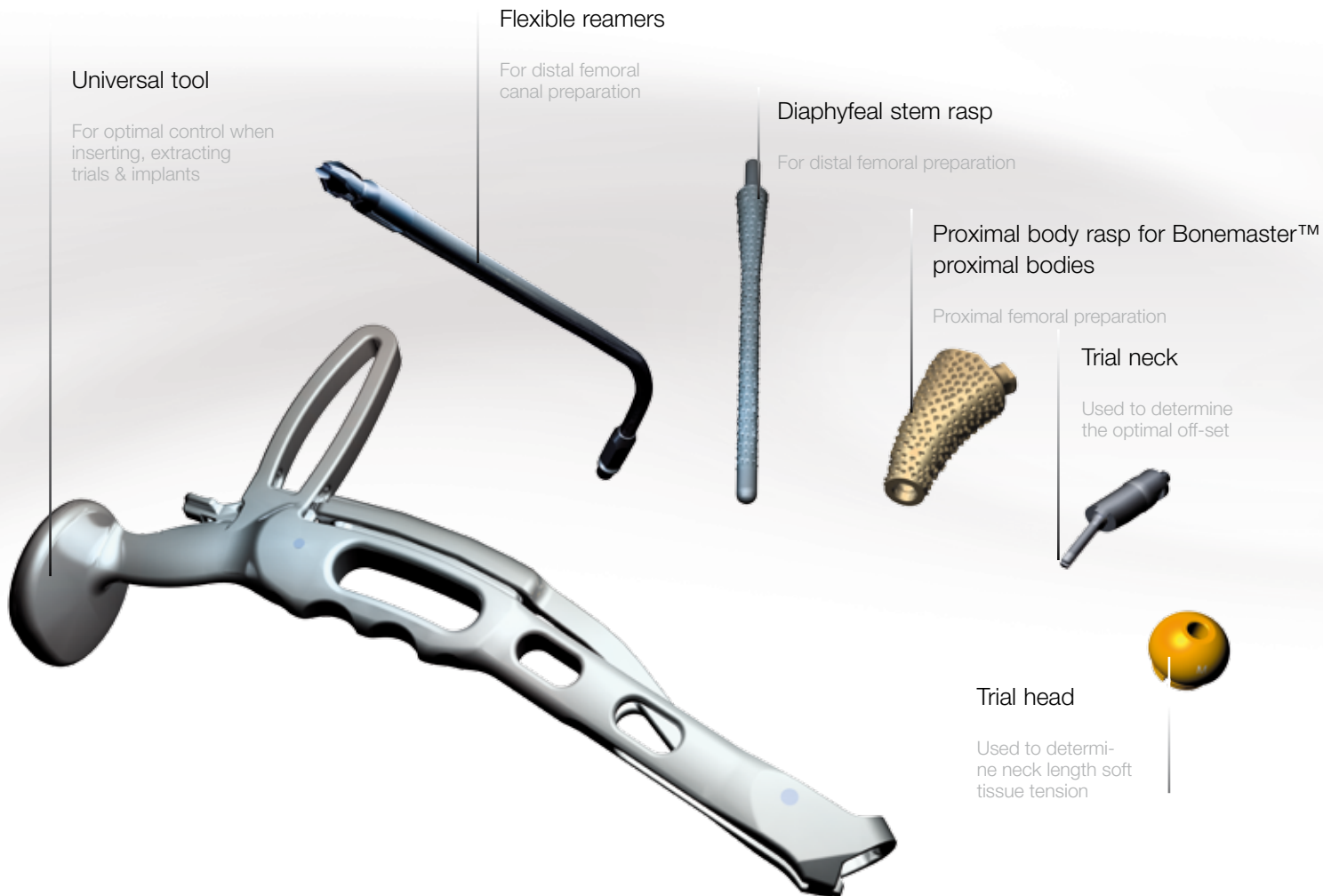
Please read the chapter “Assembly of the Hyperion prosthesis systems” on page 20. Any stem that has already been implanted should not be backed out to perform a leg length correction. Such a stem adjustment is likely to lead to uncontrolled subsidence upon loading.

In order to achieve the appropriate leg length with a trial or definitive stem that upon insertion sank deeper than expected, the next largest proximal body or the next largest stem diameter should be used. Alternatively Hyperion extension sleeves with lengths of 25 and 30 mm are available to offer flexibility in stem length.



Hyperion™ – metaphyseal fixation

The principle behind the ‘metaphyseal’ style stem is that the distal stem is used as a keel to confer axial stability to the proximal component, whilst allowing the proximal bone to bear the anatomical load. This enables optimal proximal remodelling in cases where maximising distal fixation is not key to implant survivorship as proximal fixation is sufficient. Metaphyseal stems are often used as an intramedullary nail where such an option may be beneficial in treating fracture or bridging defects over a considerable length.



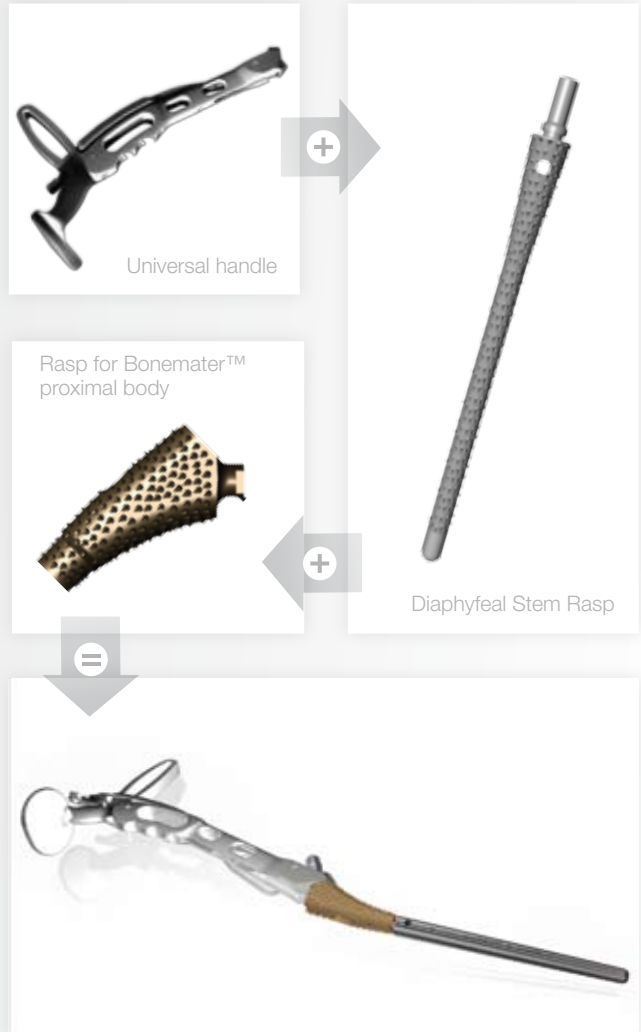
Instrument tray configuration

The layout of the instrument trays follows the operational steps and is designed to be intuitive. Colour coding simplifies the identification of the respective instrument tray intra-operatively.

1



Preparation



Operative Steps

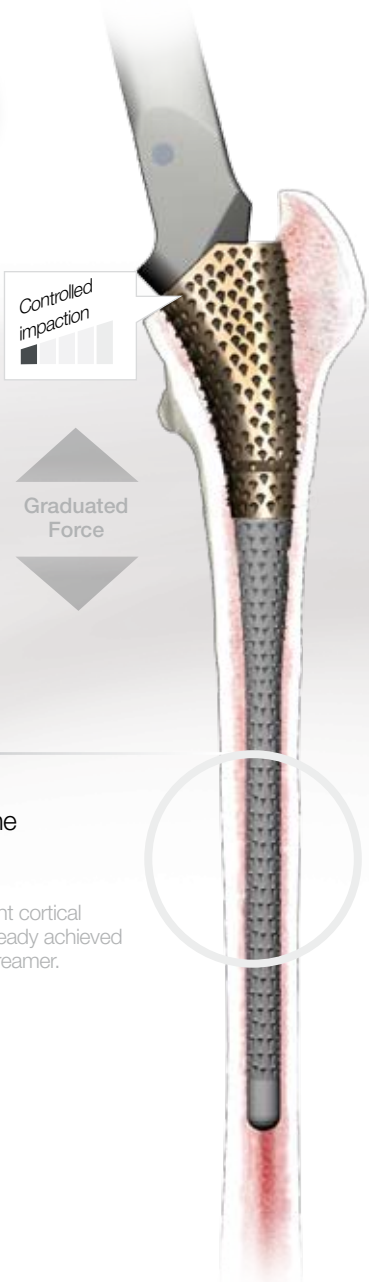
1 Preparation with flexible reamersw

Insert the olive tipped guide wire into the femur. Place the reamer over the guide wire and gradually ream the canal with the flexible reamer until slight cortical contact (chatter) is perceptible. The implant diameter is determined by the final reamer diameter, taking into account the general condition of the femur, its anterior bow and the templated stem length. The choice of

stem diameter is based crucially on the assessment of an experienced revision surgeon. The objective is to achieve adequate primary stability of the metaphyseal Hyperion prosthesis. Bonemaster proximal bodies are recommended for use with metaphyseal style stems.



2

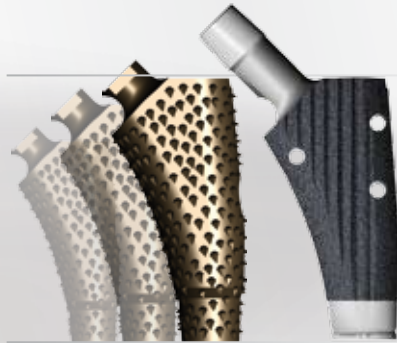


Rasping of the metaphysis

Until there is slight cortical contact if not already achieved with the flexible reamer.

The gold rasps are used for Bonemaster proximal bodies.

The patented Bonemaster coating helps ensure rapid bone in-growth.

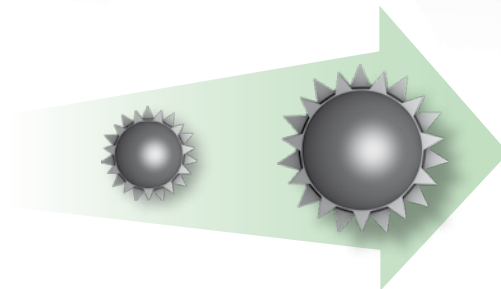


Proximal rasp size

Starting with the smallest proximal rasp using the size of the templated implant as an intended maximum.

Distal stem rasp size

No larger than the diameter of the last flexible reamer. Begin with the smallest distal stem rasp; the final rasp used determines the diameter of the definitive Hyperion stem.



2 Preparation with metaphyseal rasps

Rasping is designed to prepare the medullary canal and the proximal metaphysis independently to known dimensions. These dimensions directly correspond to proximal body and distal stem dimensions in the Hyperion System. Preparation via reaming then rasping ensures that the bone bed upon which the implant fixation will rely is suitable for bearing anatomical loads, primary & secondary implant fixation.

Rasping is performed with the universal handle. Care must be taken that only the strike plate provided on the universal handle is used to impact the rasp to ensure

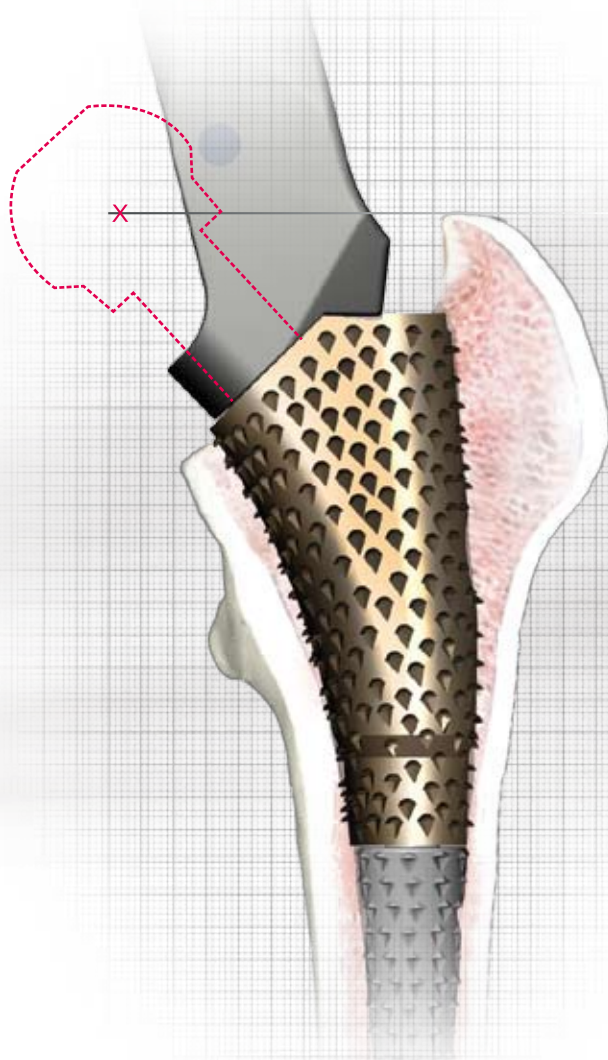
the accuracy of preparation necessary for successful cementless fixation.

Rasping should begin with the smallest proximal body. Care should be taken to ensure that the appropriate amount of version is applied to the angle of rasping, as the first rasp will help set a course along which the consecutive rasps will follow. The first stem rasp selected should be smaller in diameter than the last flexible reamer used. Rasps can be guided with a guide wire with no olive tip, if required. The metaphysis is rasped until there is slight cortical contact.

3

Correct rasp position

Align the centre of rotation of the proximal rasp with the tip of the greater trochanter.



Proximal Bodies
Size 50mm and 60mm proximal bodies are available in standard offset only. 70mm and above proximal bodies are available in standard and lateralised variants.



Trial Head



Trial Neck
Lateral (LAT) &
Standard (STD)



3

Final femoral preparation

Preparation of the proximal femur is completed when the proximal rasp size matches the desired implant size and the desired implant position are realised.

Assembly of the Hyperion prosthesis system

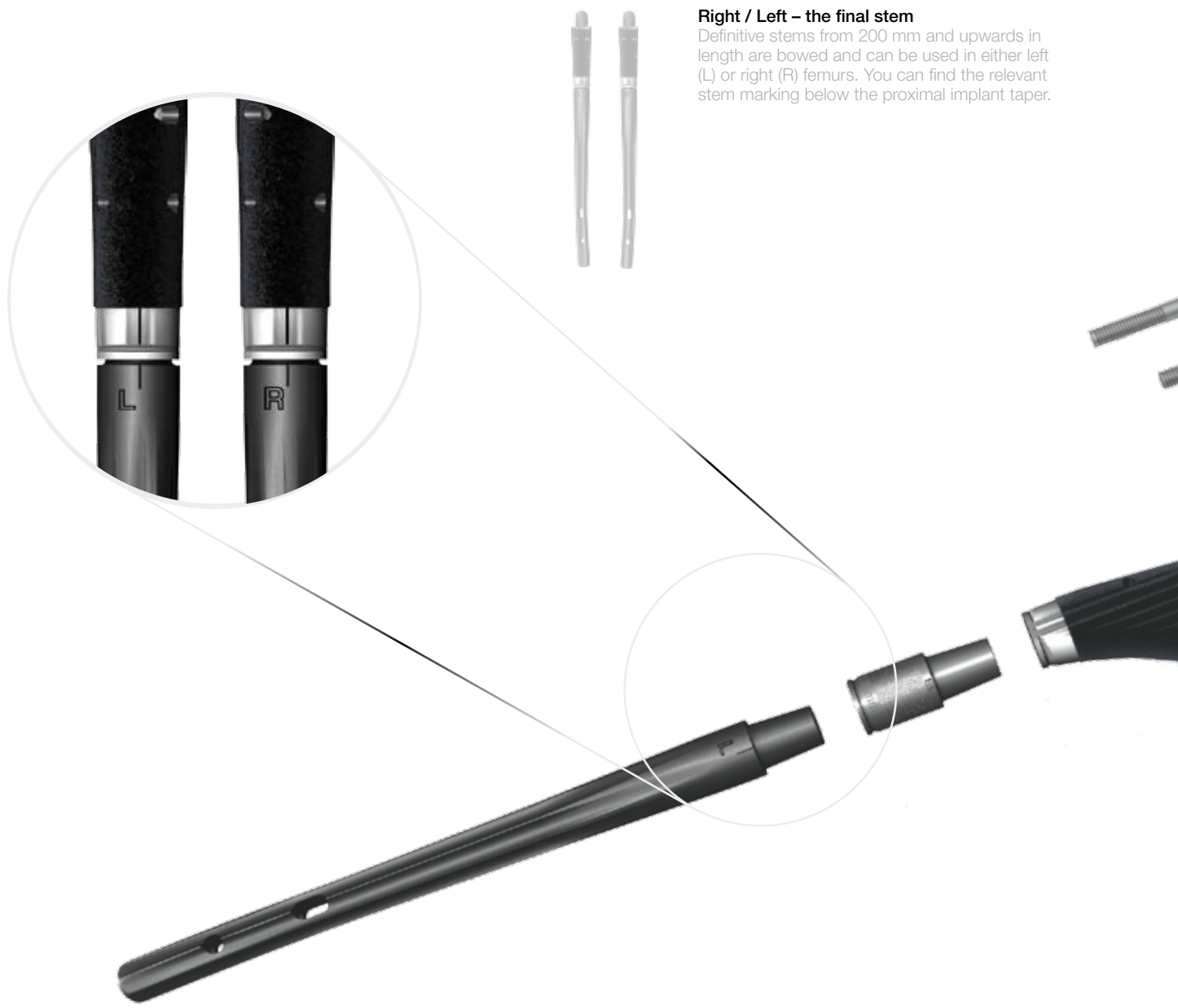
Please read the chapter “Assembly of the Hyperion Prosthesis systems” on page 20.



Tip:

It is important to take note of the fact that after preparing the canal, reaming with a flexible reaming system and preparing the prosthesis bed with the stem rasp, the standard olive tipped guide wire should be replaced by one without an olive tip. The diameter of the guide wire should not be greater than 3.6 mm.

Hyperion™ – Assembly and implantation of the system



Right / Left – the final stem

Definitive stems from 200 mm and upwards in length are bowed and can be used in either left (L) or right (R) femurs. You can find the relevant stem marking below the proximal implant taper.

Assembly of the Hyperion System

Instruments and components required for assembly of the Hyperion.

It is possible to engage the proximal body taper (if necessary with the extension sleeve) with either stem variant on the instrument table. Engagement of components can also be achieved in-situ.

Threaded shear bolt

When using an extension sleeve, the longer of the two shear bolts available must be used for assembling the Hyperion. The gold portion should remain outside the prosthesis.

Torque sleeve

The torque sleeve is a cannulated spacer which bridges the gap between the prosthesis and the torque nut when engaging the tapers with the ratchet.

Torque nut

The torque nut (gold) is screwed onto the gold coloured end of the shear bolt.

Ratchet

Applies torque to the Hyperion components via the shear bolt, until the shear bolt fractures.

Standard and lateral locking bar

The corresponding locking bar is used depending on whether a standard or lateralised Hyperion proximal body is selected.

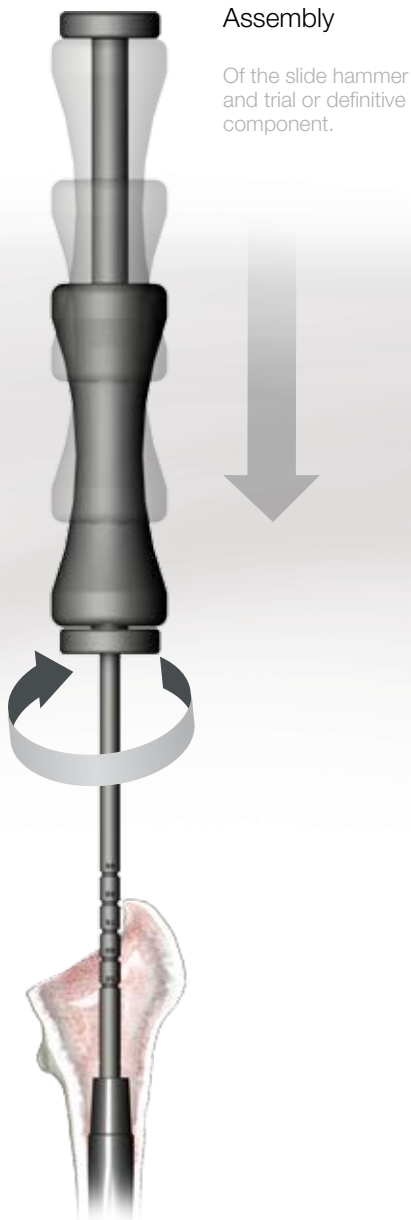
Retaining wrench

The retaining wrench provides rotational stability applying torque to the shear bolt with the ratchet.



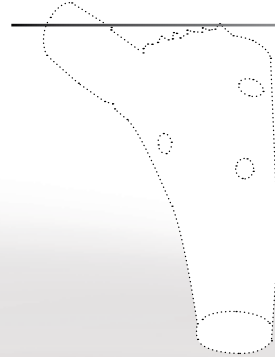
Hyperion™ – Assembly and implantation of the system

1



Assembly

Of the slide hammer and trial or definitive component.



Marking on the slide hammer

It is important to note that the markings slide hammer shaft can be used as a visual indication as to where the proximal body will sit when is assembled with a distal stem. Markings on the slide hammer are referenced with the tip of the greater trochanter.



The position of the implant and the function of the joint can be assessed via a trial reduction. This is achieved by the use of a trial proximal body, trial modular head and a trial sleeve where appropriate. These parts are temporarily fixed on to the implanted stem with the aid of the corresponding screw and screw driver (outlined above).

Alternative 1: In-situ assembly and taper engagement:

1 Implanting the Hyperion

Firstly remove any guide wires still in situ and commence insertion of the metaphyseal or diaphyseal Hyperion stem with the slide hammer. Note: **The distal stem should not be impacted to its final position at this stage.** The distal stem should only be introduced so that the stem is in contact with the bone bed to such

a degree that the surgeon is confident that once the Hyperion stem is assembled, it can then be fully seated to its final position by use of the stem impactor. See figure 1 page 28. Attention should be paid to the fact that the **taper connection is still visible** in the canal to allow assembly of the system.



2 Trial assembly and reduction

The position of the implant and the function of the joint can be assessed via a trial reduction. This is achieved by the use of a trial proximal body, trial modular head and a trial sleeve where appropriate. These parts are temporarily fixed on to the implanted stem with the aid of the corresponding screw and screw driver (outlined above).

Use of the proximal mill

The proximal metaphysis can be milled to clear any obstructing bone to aid in accessing the metaphysis or to help orientate the proximal body in the correct version. The proximal mill is assembled by screwing it into the implanted stem.

Hyperion™ – Assembly and implantation of the system



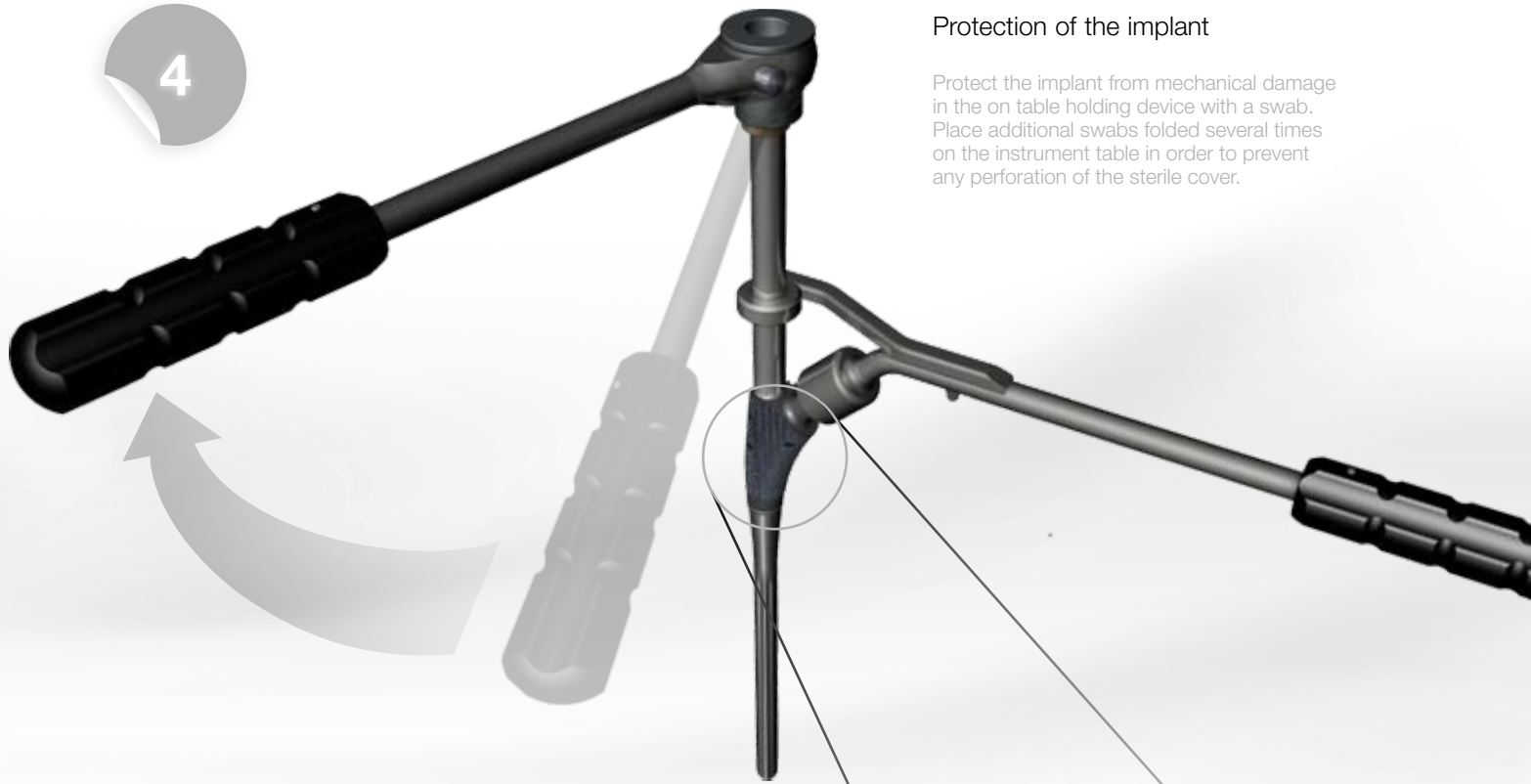
Stem assembly and trialling

Care must be taken to ensure that the taper is free of tissue and blood. **Before assembly the taper must be checked for its integrity and that the surface is not damaged.** Attach the proximal body in the desired position (angle of version) on the distal stem and push on firmly.

3 Shear bolt insertion

Slide the shear bolt through the proximal body into the distal stem as far as the stop and then importantly **screw back by two turns**. Slide the tapered end of the **torque sleeve (see figure)** over the shear bolt so that it rests inside the recess on the proximal body. The gold threaded end of the shear bolt must be protruding from the assembled taper engagement unit.

4



Protection of the implant

Protect the implant from mechanical damage in the on table holding device with a swab. Place additional swabs folded several times on the instrument table in order to prevent any perforation of the sterile cover.

Rupture of the shear bolt



The tapers are engaged by the level of torque applied by the ratchet. At a defined force the shear bolt ruptures and thus ensures an even and defined compression of the components so engaging the taper.



4

Taper engagement

It is possible to disassemble and re-assemble an already engaged prosthesis. However, each taper may **only be engaged twice before the cold weld strength is compromised.**

Place the retaining wrench on the implant taper with the locking bar on the proximal body. Tighten the torque nut with gradual turning movements of the ratchet **until the shear bolt ruptures.** Remove the part of the tension bolt remaining in the stem the flat spanner can be used if the shear bolt has jammed during this step.

Hyperion™ – Assembly and implantation of the system



Alternative 2: On table assembly of the Hyperion components.

1 Assembly of the Hyperion stem and the proximal body.

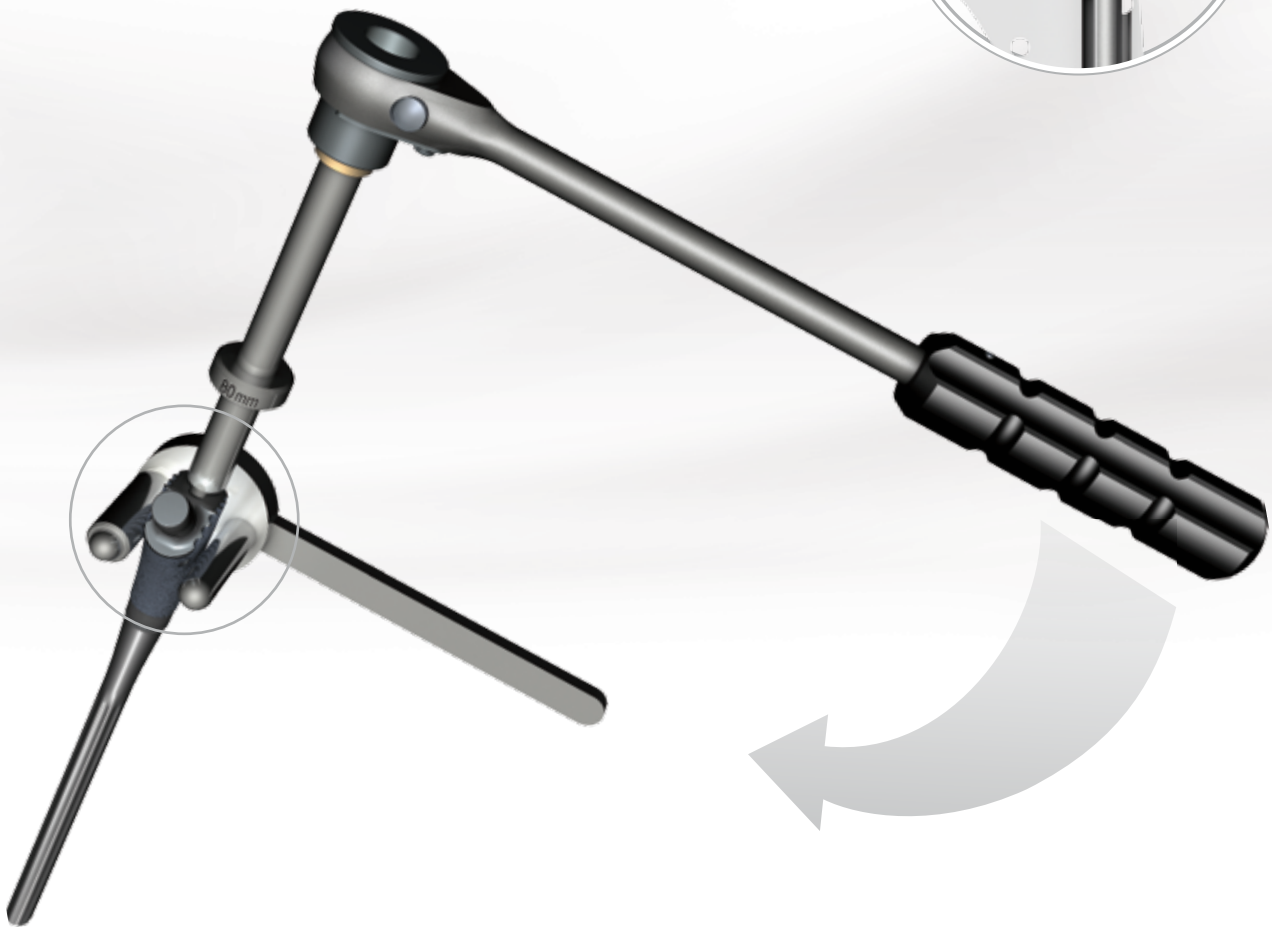
The proximal body and the stem are assembled. Care must be taken that the taper is free of tissue and blood. Prior to assembly the tapers integrity must be checked. In curved stems, over 200 mm in length, markings indicate the correct alignment for the left (L) and right (R)

femur respectively. When the markings on the proximal body and distal stem are aligned they correspond to an anatomical angle of 15 degrees of anteversion. **The appropriate version can thus be freely chosen to best suit an individual patient's need.**

3

Rupture of the shear bolt

The tapers are compressed via the torque applied by the ratchet. At a defined force the shear bolt ruptures and thus ensures an even compression of the components.



2 Tensioning on the instrument table

Screw the non-golden end of the shear bolt through the proximal body if necessary with extension sleeve into the stem as far as the stop and **unscrew by two turns**. Then slide the torque sleeve with the tapered end first over the shear bolt. The gold end of the shear bolt must protrude out of the torque unit.

3 The retaining instrument

Place the retaining ratchet on the prosthesis taper and support the locking bar on the implant. Tighten the torque nut using the ratchet with gradual movements **until the shear bolt ruptures**. Remove the part of the shear bolt remaining in the stem. The flat spanner can be used if the shear bolt has jammed when tensioning in the stem taper.

Note: Please make sure that there are no sharp items below the ratchet in order to avoid injuries during ratchet action.

Hyperion™ – Implantation of the prosthesis system

1



2



Trial positioning using a trial head

To determine the appropriate neck length and head size.

Fixation of the Hyperion prosthesis system

1

Final fixation

Final seating of the Hyperion stem is achieved by using the impactor handle.

2

Final trialling

A final trial can be performed with the trial head previously selected using the definitive prosthesis in order to determine the ideal neck length for the head.

3

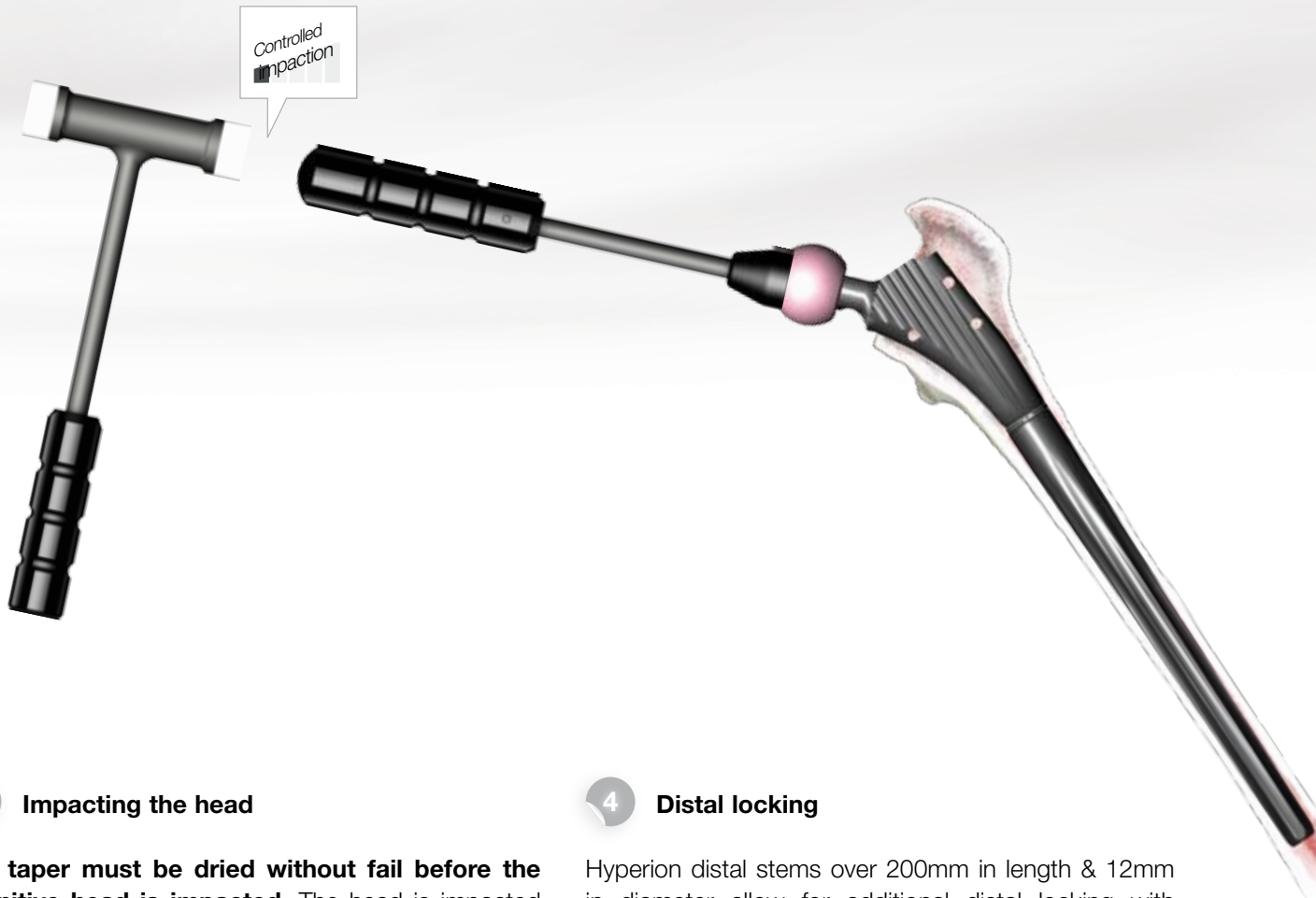
Clean and dry taper

The taper must be dried before the head is attached.



Screw on the head

Turning while fitting the head ensures that the head is centred properly prior to impaction.



3

Impacting the head

The taper must be dried without fail before the definitive head is impacted. The head is impacted onto the undamaged stem taper with a slight turning motion. Screwing on the head ensures that it is centred properly prior to impaction. To engage the head on trunion a light hammer tap using the head impactor is advised.

4

Distal locking

Hyperion distal stems over 200mm in length & 12mm in diameter allow for additional distal locking with 4.5 mm titanium screws. Distal locking is intended to counter prosthesis rotational instability or stabilize a distal femoral fragment such as in cases of peri-prosthetic fracture. Whilst screws will augment fixation **screws are not designed as load bearing devices.** Minor post-operative subsidence commonly seen in un-cemented prosthesis and which subsequently enhances over all fixation is enabled by the use of the dynamic screw hole.

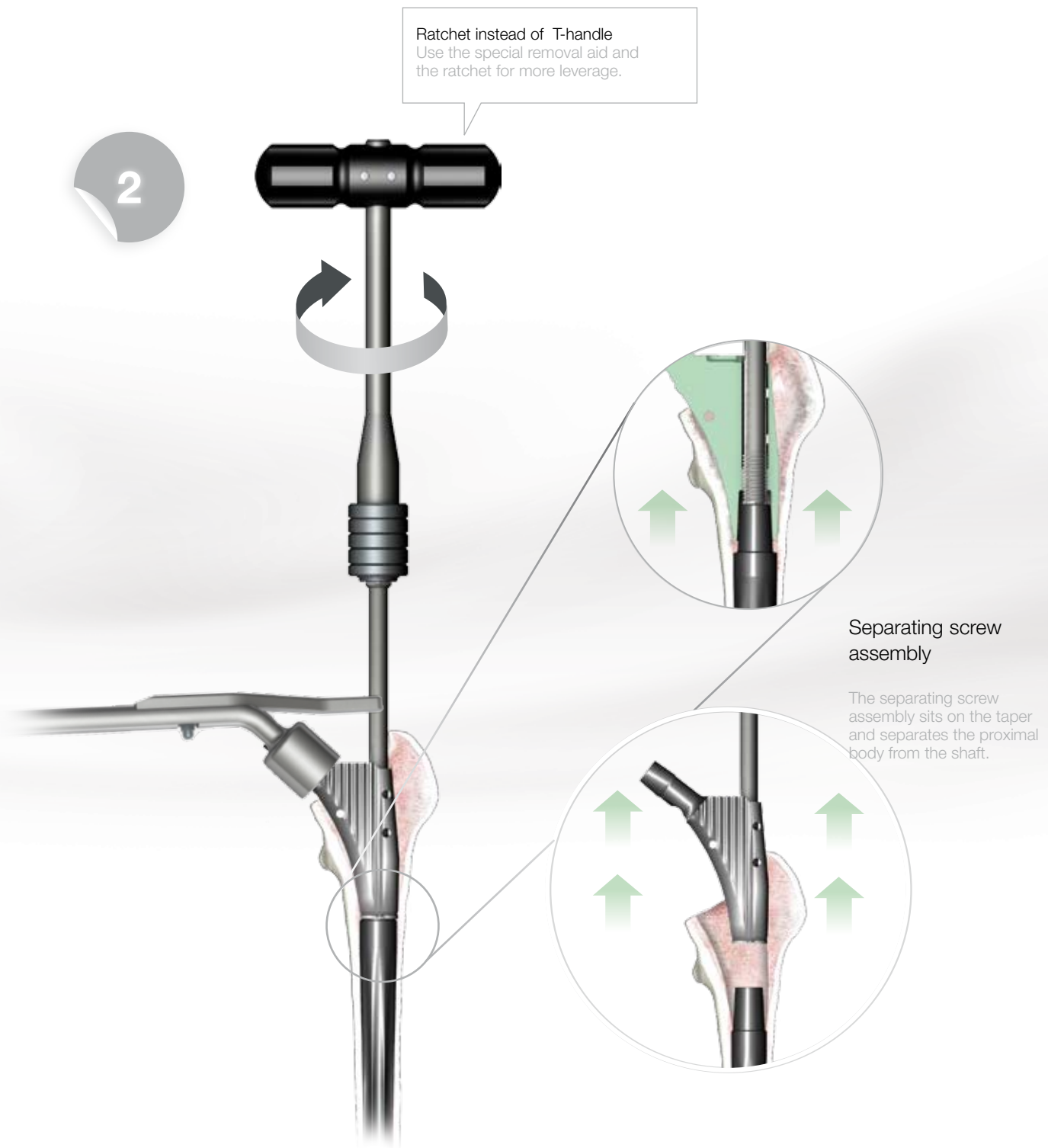
Hyperion™ – Removal of a Hyperion stem



Removal of the Hyperion prosthesis system

1 Extraction of the complete implant

If necessary, a Hyperion femoral stem can be extracted by use of the slide hammer. To achieve this, the slide hammer should be screwed into the central hole of the proximal body. Extraction via the universal introducer handle is likewise possible.



2 In-situ disassociation of Hyperion modular components

An assembled Hyperion can be dismantled by using the **dissociation screw assembly and the T-handle**. If an extension sleeve is used, the long version of the dissociation screw assembly must be used. **Each taper should only be tensioned / engaged a maximum of twice.**

Removal tool

With the aid of the removal tool (not shown) the ratchet can be used to dismantle the components instead of the T-handle. The surgeon thus has a larger lever arm available. To this end slide the removal aid onto the hexagonal bolt of the removal head until it stops.

Additional BIOMET® Products

Freedom™ constrained liner system

The first generation of constrained liners relied almost exclusively on a metal constraining ring to provide stability and prevent dislocation. Biomet's Freedom Constrained Liner System takes this design two steps further to a new level of tri-mode stabilization in order to improve performance and enhance functional range of motion.



Average Lever-out Force: 198 lbs.

Range of Motion: 110°

Available in 12/14 & Type 1 tapers.

MODE ONE: MODULAR HEAD EQUATORIAL FLATS

Circumferential flats along the Freedom Liner's 36mm head permit easier reduction and provide an extremely strong construct that actively counters the distractive forces that can lead to hip dislocation.

MODE TWO: TITANIUM CONSTRAINT RING

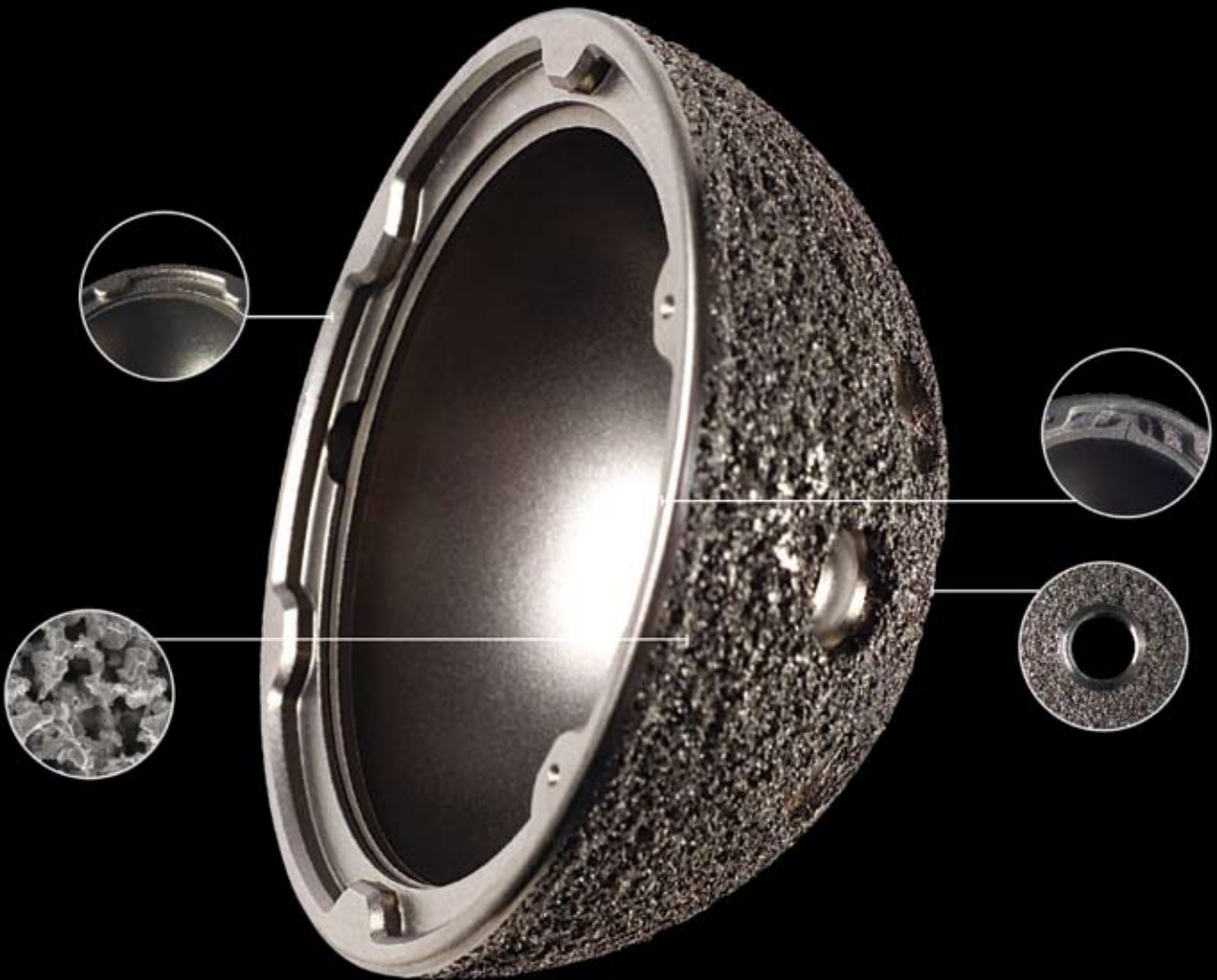
This traditional titanium constraint ring supplements the Freedom Liner's inherent stability by increasing resistance to lever-out under high demand conditions.

MODE THREE: HYDRAULIC STABILIZATION

Tightly controlled manufacturing tolerances on the Freedom Liner recreate a natural fluid membrane between the head and liner, resulting in a "suction effect" that further minimizes the possibility of joint dislocation. (2)


regenerex™
porous titanium construct

Regenerex™ Porous Titanium Construct combines the tried and tested clinical history of Biomet's® titanium alloy with a unique fully porous structure for enhanced scratch fit, true ingrowth and osteo-conduction.(3, 4)






Hyperion™ – Order Information

Proximal Body

Product	Angle	Height	Coating	Order Number
	Std, CCD 135°	50 mm		99A722.05
	Std, CCD 135°	60 mm		99A722.06
	Std, CCD 135°	70 mm		99A722.07
	Std, CCD 135°	80 mm		99A722.08
	Std, CCD 135°	90 mm		99A722.10
	Std, CCD 135°	50 mm	BoneMaster	99A722.05B
	Std, CCD 135°	60 mm	BoneMaster	99A722.06B
	Std, CCD 135°	70 mm	BoneMaster	99A722.07B
	Std, CCD 135°	80 mm	BoneMaster	99A722.08B
	Std, CCD 135°	90 mm	BoneMaster	99A722.10B
	Lat, CCD 128°	70 mm		99A760.07
	Lat, CCD 128°	80 mm		99A760.08
	Lat, CCD 128°	90 mm		99A760.10
	Lat, CCD 128°	70 mm	BoneMaster	99A760.07B
	Lat, CCD 128°	80 mm	BoneMaster	99A760.08B
	Lat, CCD 128°	90 mm	BoneMaster	99A760.10B

Fluted and Cylindrical Distal Stem

Product	Size	Order Number
	Metaphyseal Fixation	
	10 x 160 mm	99A725.14
	10 x 200 mm	99A725.15
	10 x 240 mm	99A725.16
	10 x 280 mm	99A725.17
	12 x 160 mm	99A725.24
	12 x 200 mm	99A725.25
	12 x 240 mm	99A725.26
	12 x 280 mm	99A725.27
	14 x 160 mm	99A725.44
	14 x 200 mm	99A725.45
	14 x 240 mm	99A725.46
	14 x 280 mm	99A725.47
	14 x 320 mm	99A725.48
	16 x 160 mm	99A725.64
	16 x 200 mm	99A725.65
16 x 240 mm	99A725.66	

Product	Size	Order Number
 Metaphyseal Fixation	16 x 280 mm	99A725.67
	16 x 320 mm	99A725.68
	18 x 160 mm	99A725.84
	18 x 200 mm	99A725.85
	18 x 240 mm	99A725.86
	18 x 280 mm	99A725.87
	18 x 320 mm	99A725.88
	20 x 160 mm	99A725.94
	20 x 200 mm	99A725.95
	20 x 240 mm	99A725.96
	20 x 280 mm	99A725.97
 diaphyseal fixation	12 x 160 mm	99A750.24
	12 x 200 mm	99A750.25
	12 x 240 mm	99A750.26
	14 x 160 mm	99A750.44
	14 x 200 mm	99A750.45
	14 x 240 mm	99A750.46
	16 x 160 mm	99A750.64
	16 x 200 mm	99A750.65
	16 x 240 mm	99A750.66
	18 x 160 mm	99A750.84
	18 x 200 mm	99A750.85
	18 x 240 mm	99A750.86
	20 x 160 mm	99A751.04
	20 x 200 mm	99A751.05
	20 x 240 mm	99A751.06
	22 x 200 mm	99A751.25
22 x 240 mm	99A751.26	

Shear Bolt and Extension Sleeve

Product	Product Description	Order Number
	Hyperion extension sleeve 25 mm	99A770.02
	Hyperion extension sleeve 30 mm	99A770.03
	Hyperion shear bolt short	99I319.10
	Hyperion shear bolt long	99I319.20

Modular prosthesis heads - 12/14th taper, CoCrMo

Neck Length	22,22 mm	28 mm	32 mm	36 mm	40 mm
- 4,0 mm	-	-	P0206C32	-	-
- 3,5 mm	-	P0206C28	-	-	-
- 2,0 mm	P0206C22	-	-	-	-
- 0,0 mm	P0206M22	P0206M28	P0206M32	-	-
+ 2,0 mm	P0206L22	-	-	-	-
+ 3,5 mm	-	P0206L28	-	-	-
+ 4,0 mm	-	-	P0206L32	-	-
+ 7,0 mm	-	P0206E28	-	-	-
+ 8,0 mm	-	-	P0206E32	-	-
+ 10,5 mm	-	P0206228	-	-	-
+ 12,0 mm	-	-	P0206232	-	-

Modular prosthesis heads - 12/14th taper, M2A CoCrMo

Neck Length	22,22 mm	28 mm	32 mm	36 mm	40 mm
- 4,0 mm	-	-	650-0882	650-0887	650-1020
- 3,5 mm	-	650-877	-	-	-
- 2,0 mm	164131	-	-	-	-
- 0,0 mm	164132	650-0878	650-0883	650-0888	650-1021
+ 2,0 mm	164133	-	-	-	-
+ 3,5 mm	-	650-0879	-	-	-
+ 4,0 mm	-	-	650-0884	650-0889	650-1022
+ 7,0 mm	-	-	-	-	-
+ 8,0 mm	-	-	-	650-0890	650-1023
+ 10,5 mm	-	-	-	-	-
+ 12,0 mm	-	-	-	-	650-1024

* M2A CoCr heads must only be combined with M2a inlays

Modular prosthesis heads - 12/14th taper, C" delta ceramic

Neck Length	22,22 mm	28 mm	32 mm	36 mm	40 mm (Delta Option)
- 4,0 mm	-	-	650-0833	650-0836	-
- 3,5 mm	-	650-830	-	-	650-106 + 650-1058
- 2,0 mm	-	-	-	-	-
- 0,0 mm	-	650-0831	650-0834	650-0837	650-1061 + 650-1058
+ 2,0 mm	-	-	-	-	-
+ 3,5 mm	-	650-0832	-	-	-
+ 4,0 mm	-	-	650-0835	650-0838	650-1062 + 650-1058
+ 7,0 mm	-	-	-	-	650-1063 + 650-1058
+ 8,0 mm	-	-	-	650-0667	-
+ 10,5 mm	-	-	-	-	-
+ 12,0 mm	-	-	-	-	-

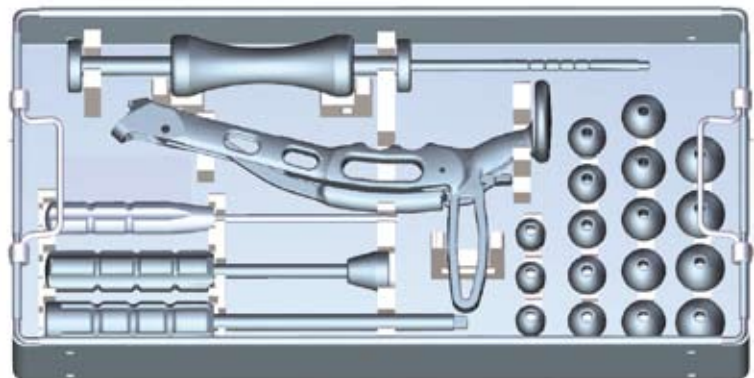
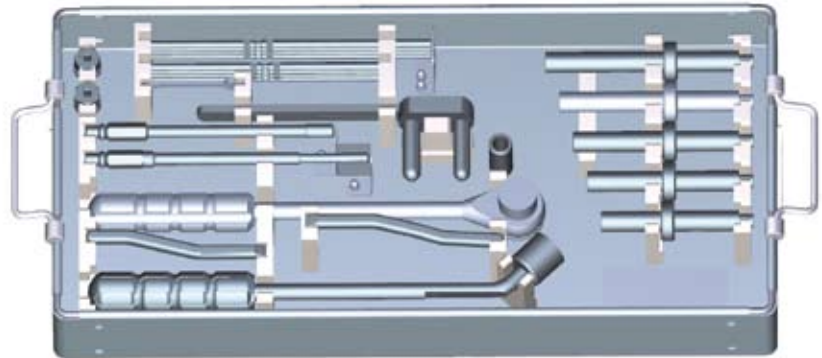
In this instance a colour coding simplifies the identification of the respective instrument tray intra-operatively, in the course of which the coding of the trays corresponds

to the index composition of these operating procedure instructions.

GENERIC INSTRUMENTS

Generic Instruments I
Part No. 61-600010

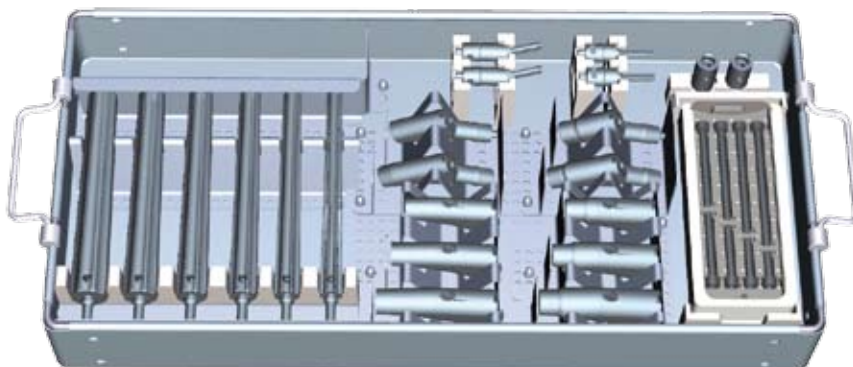
Generic Instruments II
Part No. 61-600020



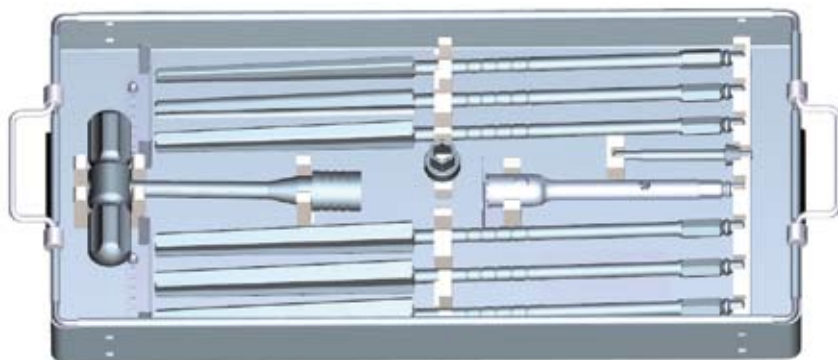
DIAPHYSAL INSTRUMENTS



Diaphysal Instruments I
Part No. 61-600030



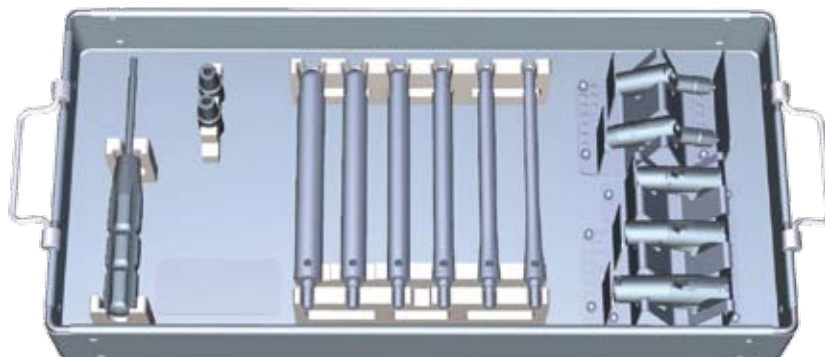
Diaphysal Instruments II
Part No. 61-600040



METAPHYSAL INSTRUMENTS



Part No. 61-600050



References

1. Paprosky W.G., Lawrence J., Cameron H.: Femoral defect

classification: clinical application. Orthop. Rev. 19: 9, 1990

2. Konistek, R., et al.: "In-Vivo Comparison of Hip Separation After Metal-on-Metal or Metal-on-Polyethylene Total Hip Arthroplasty." JBJS, 84: 1836–1841, 2002.

3. Data on file at Biomet, Inc. Bench test results are not necessarily

indicative of clinical performance

4. Testing done on animal models

 0123

Responsible Manufacturer

Biomet Deutschland GmbH

Gustav-Krone-Str. 2

D-14167 Berlin

Tel.: 030 / 845 81-0

Fax: 030 / 845 81-110

www.biometdeutschland.de

FLH 202



One Surgeon. One Patient.