
METS™ Modular Proximal Humerus



Contents

1.0	Device information	2 – 3
	1.1 Product overview	
	1.2 Indications	
	1.3 Absolute contra-indications	
	1.4 Relative contra-indications	
	1.5 Capabilities and restrictions of use	
	1.6 Pre-operative planning	
	1.7 Recommendations for component selection	
	1.8 General points to note when using trial components	
	1.9 Recommendations for assembly of implant	
2.0	Hemi-arthroplasty option	4 – 14
	2.1 Specialised instruments	
	2.2 Components	
	2.3 Trial components	
	2.4 Bone preparation	
	2.4.1 Humeral resection levels	
	2.5 Trial assembly and insertion	
	2.6 Implant assembly and insertion	
	2.6.1 Resections < 80mm	
	2.6.2 Resections > 80mm	
3.0	Linked glenoid (Bayley Walker) option	15 – 26
	3.1 Specialised instruments	
	3.2 Components	
	3.3 Trial components	
	3.4 Bone preparation	
	3.4.1 Humeral resection levels	
	3.4.2 Glenoid preparation (link glenoid option only)	
	3.5 Trial assembly and insertion	
	3.6 Implant assembly and insertion	
	3.6.1 Resection < 75mm	
	3.6.2 Resection > 75mm	
	3.6.3 Linked glenoid joint reduction	
	3.7 Dis assembly	
4.0	Parts and order references	27

Key:

The METS proximal humeral system is available with two options of humeral components:

- Hemi-arthroplasty humeral component, which is covered in Section 2.
- Linked glenoid fixed fulcrum humeral component, covered in Section 3.
- Once you have carefully read Section 1, please refer to either Section 2 or Section 3, depending on the humeral component you want to use.

1.1 Product overview

The METS Proximal Humeral system is designed as a modular system that can be used to replace diseased or deficient bone of the proximal humerus. The system consists of a proximal humeral component, a range of shafts in 15mm increments to suit differing lengths of resections, a range of hydroxyapatite coated and uncoated collars of different diameters to match the size of the resected bone and a range of cemented stems to fit the intramedullary canal. Individual components of the humeral shaft are connected using interlocking taper junctions allowing quick and easy assembly.

The proximal humeral component has two options: the hemi-arthroplasty component and the linked glenoid component. Both options are designed with 30° retroversion and are available with or without hydroxyapatite coated rails, which allow the reattachment of soft tissue.

When selecting the type of humeral component, the amount of soft tissue coverage available should be assessed to ascertain which humeral component is suitable. This is a clinical decision that should be made by the surgeon during surgery.

1.2 Indications

- Primary bone tumour.
- Secondary tumour arising in bone.
- Non-neoplastic conditions affecting the shafts of long bones.
- Failed joint replacements.
- Failed massive replacements.

1.3 Absolute contra-indications

- Infection and sepsis.

1.4 Relative contra-indications

- Inadequate or incomplete soft tissue coverage.
- Uncooperative or unwilling patient or patient unable to follow instructions.
- Foreign body sensitivity. Where material sensitivity occurs, seek advice with respect to testing.
- Vascular disorders, neuromuscular disorders or muscular dystrophy.

1.5 Capabilities and restrictions of use

- The components are to be assembled and used only in the manner specified. Any deviation from this may reduce the in-service life of the prosthesis.
- Mixing with unspecified components either from Stanmore Implants or from other manufacturers is not permitted since this will lead to mal-alignment, inadequate assembly, excessive wear and premature failure.
- A fully assembled METS Proximal Humeral system must consist of one of the two humeral options, and either:
 - a principal shaft, a collar and a stem or
 - an integral shaft/stem construct or
 - a collar and a stem.
- Failure to use a collared device may result in excessive subsidence of the prosthesis. A plain collar is provided if hydroxyapatite coating is not required.
- For the hemi-arthroplasty option, a proximal humeral component consists of the humeral component, a head and a screw.
- For the linked glenoid option, the proximal humeral component consists of the humeral component, a polyethylene liner, a retaining ring and a glenoid component. Should the interlocking surfaces of any of the implant components become damaged, they must not be used.
- The implant components are for SINGLE USE only and they must not be re-used.
- Do not use if package is damaged.
- A set of instruments is provided to assist assembly of the prosthesis, which includes a set of trial components. The trial components are coloured to easily distinguish them from the implant components.
- In addition, the trial components cannot be used in combination with implant components, with the exception of the linked glenoid component. See Section 1.7.
- This implant is manufactured from titanium and CoCr alloys and therefore under no circumstances should it be allowed to contact a stainless steel implantable device since this may induce galvanic corrosion.
- The METS Proximal Humerus and its components are for single use only.
- The METS Proximal Humerus and its components are for cemented use only.
- When cementing components into the bone, it is recommended that a high viscosity bone cement is used.
- The METS Proximal Humeral System has not been evaluated for safety and compatibility in the MR environment.
- The METS Proximal Humeral System has not been tested for heating or migration in the MR environment.

A



1.6 Pre-operative planning

It is important to assess the radiographs before the operation to establish the approximate size of the components required for each individual patient. This will reduce the number of trial components used during surgery.

The following points should be considered during this assessment:

- The type of humeral component (hemi-arthroplasty or linked glenoid and with or without rails)
- If using the hemi-arthroplasty option, the size of the proximal humeral component (small or standard) and the size of the humeral head.
- If using the linked glenoid option, the size of the glenoid component (extra-small, small or standard)
- The side of the proximal humeral component (left or right)
- The shaft length
- The collar type (with hydroxyapatite coating or plain)
- The stem length and diameter.

1.7 Recommendations for component selection

Stem

In order to optimise the implant fixation and strength, it is recommended that, where possible, the longest intramedullary stem is used and the largest diameter is chosen whilst still maintaining a minimum of 1mm cement mantle.

Shaft and collar

The prosthetic construct should only have one shaft with a collar. More than one shaft must not be used. If a hydroxyapatite coated collar is not required, then a plain uncoated one must be used instead.

Humeral component

A hemi-arthroplasty humeral component can be used when there is suitable soft tissue coverage surrounding the humeral head. If this is not available and the surrounding tissues have been sacrificed, then the linked glenoid option is recommended.

Humeral components are also supplied with the option of a HA coated rail to allow reattachment of available soft tissues.

1.8 General points to note when using trial components

- Except the collars, trial shafts and stems are assembled with a push and click mechanism, where the rotational orientation is controlled by an anti-rotation lug.
- The trial collar, which is unidirectional, is simply slid over the shaft and is held in position by the insertion of the stem.
- The trial components are designed to give a representation of the volume of the actual implant component. Therefore, during the trial reduction, they should provide an indication of the degree of soft tissue coverage and the function of the device.
- Trial humeral components have no rails.
- **A** During removal of the trial implant, if the stem should become lodged in the canal and left behind, use the trial stem extractor to remove it.
- There is no trial glenoid component for the linked glenoid option. The trial reduction is performed, with the implanted glenoid component, therefore care must be taken to ensure it is not damaged.

1.9 Recommendations for assembly of implant

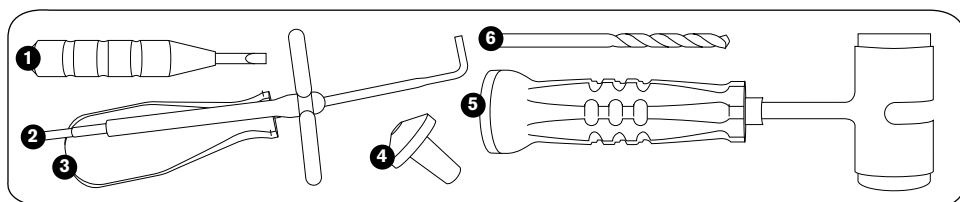
It is recommended that the following points be considered during assembly of an implant:

- Always fully assemble an implant before exposing it to the body's environment; failure to do so may result in contaminating the interlocking mechanism, which can impair the performance of the implant.
- Impact each junction as described in section 2.6 or 3.6, in order to provide optimum strength to the joint. This is important since each interface may experience large bending forces that may result in excessive wear and fretting if not correctly assembled.
- Care must also be exercised when assembling components with hydroxyapatite coating, as it is brittle and can easily be damaged.
- For both proximal humeral options (hemi-arthroplasty and linked glenoid), the anterior aspect is determined by the disassembly hole, which should always be facing anterior when inserted into the bone.

The Hemi-arthroplasty proximal humeral replacement is recommended when the majority of soft tissue coverage is available, as the soft tissues will help to retain the head in the patient's joint. It is available in small and standard sizes.

If the surrounding tissues are not available, then the linked glenoid option is recommended. Please refer to Section 3.

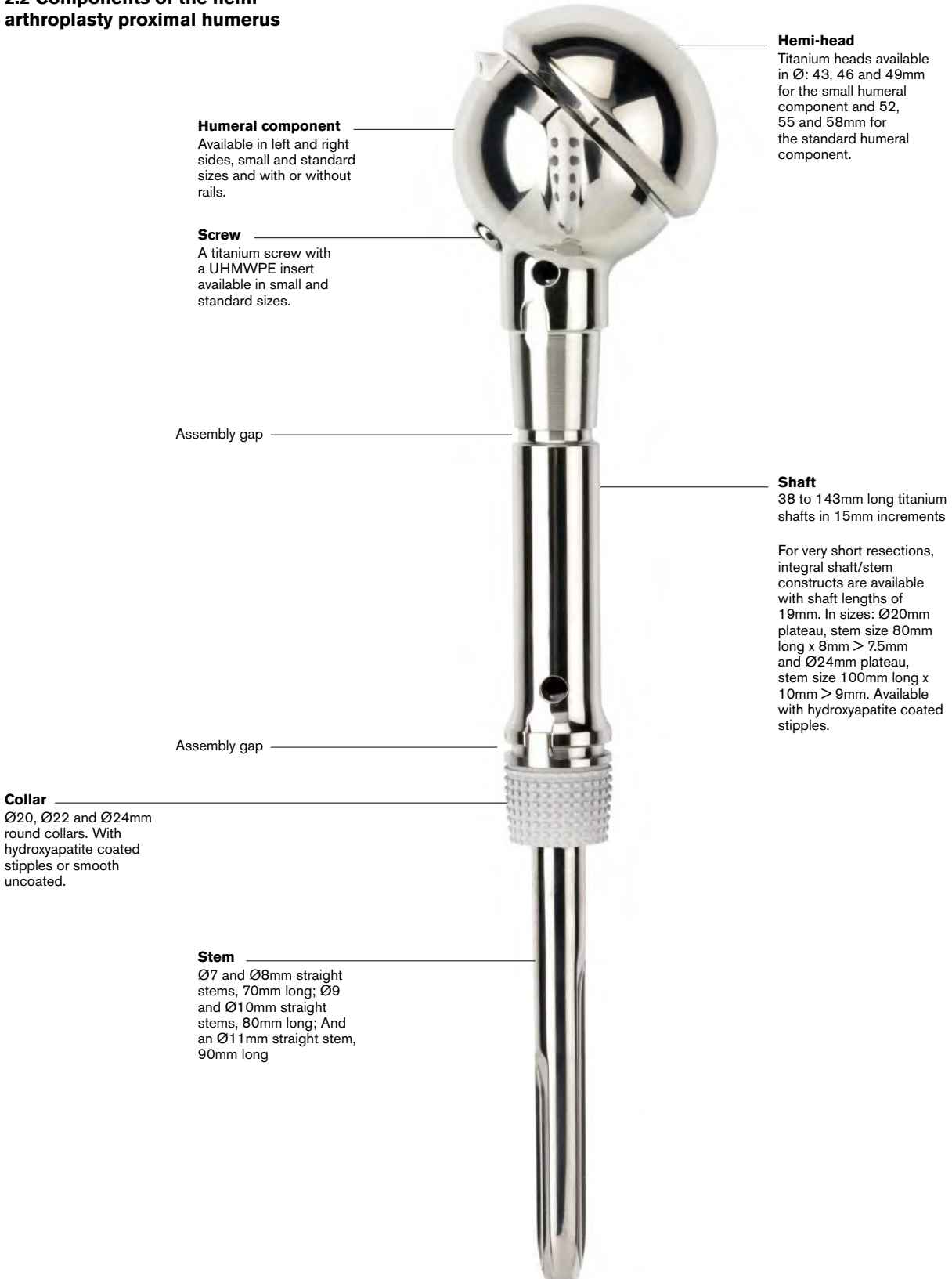
2.1 Specialised Instruments for the hemi-arthroplasty option



- 1 Distraction Tool
- 2 T-handled Allen/Hex Key 4mm
- 3 Stem extractor
- 4 Collar impactor
- 5 Hammer (with soft ends)
- 6 6mm drill

In addition to these tools, it is anticipated that the operating theatre should make available a bone saw (blade thickness: max 1.48mm), a set of reamers from Ø6 to Ø13mm and an appropriate cement application device.

2.2 Components of the hemi-arthroplasty proximal humerus



Note: Each shaft length has a 2.5mm assembly gap included in the shaft lengths. This gap has been built into the length of the trials.

2.3 Trial components of the hemi-arthroplasty proximal humerus

Humeral component

Available in left and right sides, small and standard sizes.



Hemi-head

Available in diameters Ø43mm, Ø46mm and Ø49mm for small humeral components and Ø52mm, Ø55mm and Ø58mm for standard humeral components.

Shaft

38 to 143mm shafts in 15mm increments.

Integral Shaft/Stem constructs are available with a shaft length of 19mm and plateaus in Ø20mm, stem size 80mm long x 8mm > 7.5mm and Ø24mm plateau, stem size 100mm long x 10mm > 9mm.

Collar

20, 22 and 24mm diameter collars.

Cemented stem

Ø7 and Ø8mm straight stems, 70mm long; Ø9 and Ø10mm diameter straight stems, 80mm long; and an Ø11mm straight stem, 90mm long.

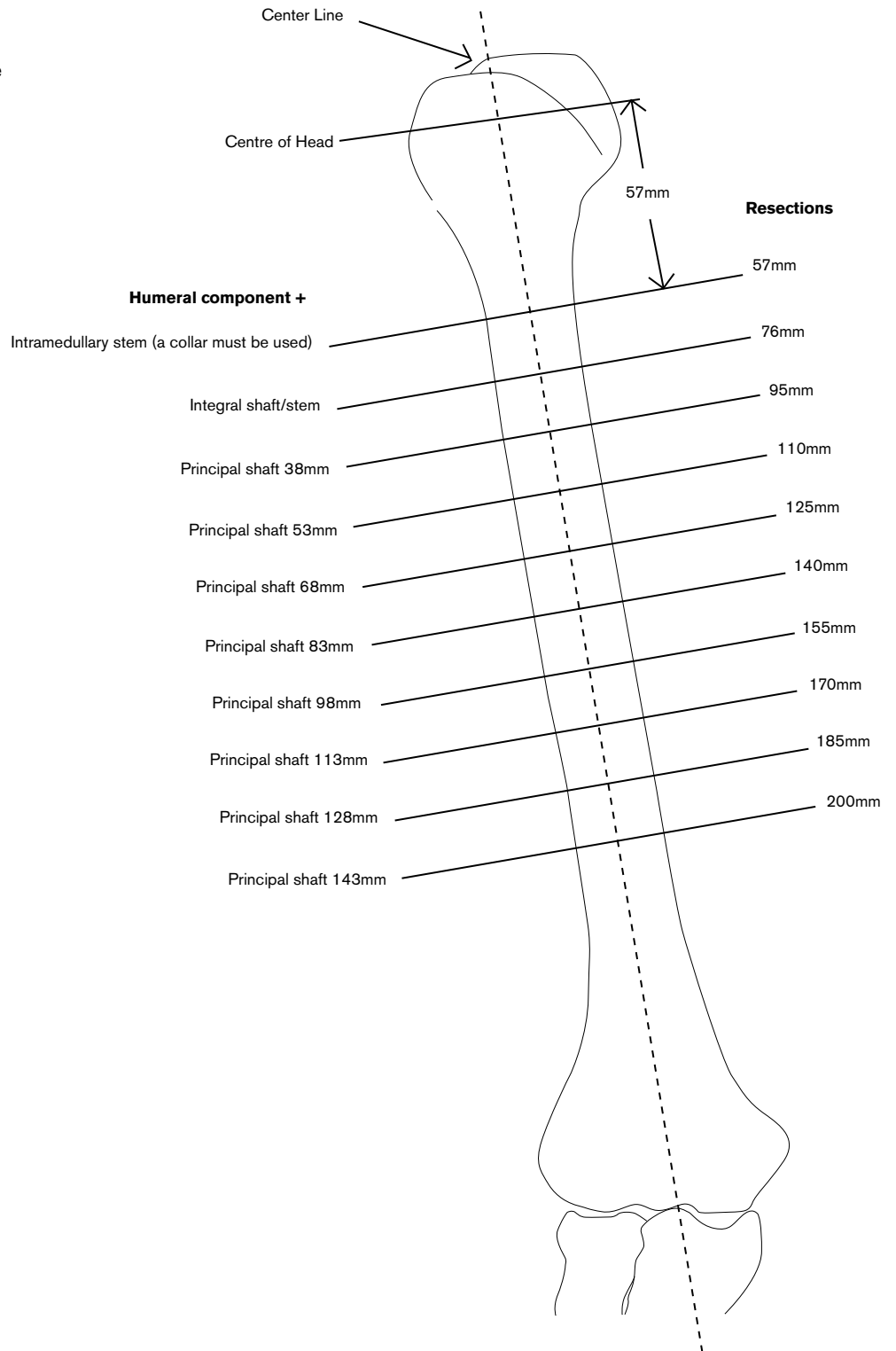
2.4 Bone preparation

2.4.1 Humeral resection levels

2.4.1.1 Hemi-arthroplasty option

Small

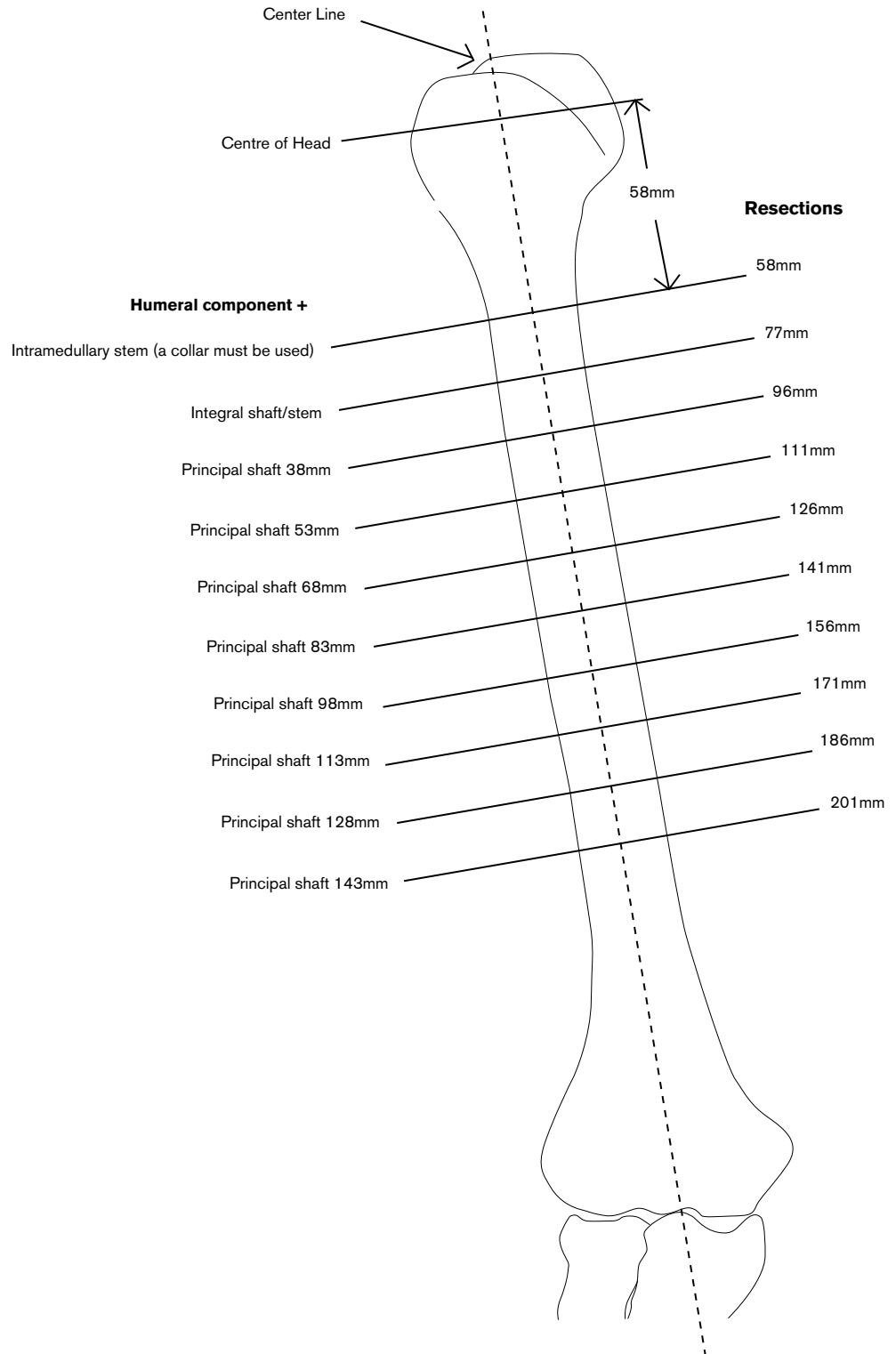
It should be noted that collar lengths are included in the resection values.



2.4.1.2 Hemi-arthroplasty option

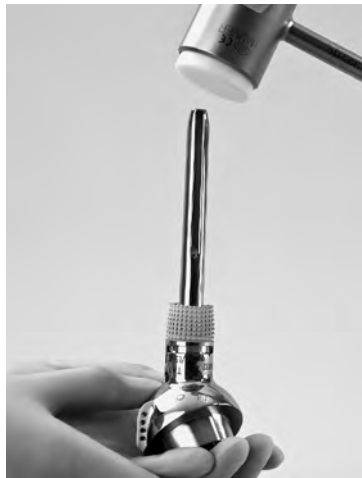
Standard

It should be noted that collar lengths are included in the resection values.



2.5 Trial assembly and insertion

- Select the required side (left or right) of the proximal humeral component.
- Select the size of the proximal humeral component (small or standard). This should be determined from the native humeral head diameter including the cartilage.
- The small proximal humeral component allows head diameters of 43, 46 and 49mm only, whereas the standard proximal humeral component allows head diameters of 52, 55 and 58mm only.
- Select the appropriate size trial shaft, collar and stem to replace the resected length of the humerus and assemble them as described in section 1.7. The assembly sequence should be shaft into humeral component, followed by the collar and stem respectively.
- Once the main body of the proximal humeral trial implant is assembled, the hemi-head can be attached.
- Insert the trial proximal humeral assembly into the humerus.
- With all trial components in place, perform a trial reduction.
- If the joint is too tight or too loose between shaft increments, it may be necessary to resect extra bone from the humerus or change the trial shaft components and repeat the trial reduction.
- Once satisfied, remove all trial components and select the corresponding implant components.
- During the removal of the trial implant, if the stem should become lodged within the canal and left behind, the stem extractor should be used to remove it as shown on Page 3.

A**B****C**

2.6 Implant assembly and insertion

2.6.1 Resections < 80mm

2.6.1.1 Humeral component + intramedullary stem

- **A** For resections of 57mm (small humeral component) and 58mm (standard humeral component), the humeral stem can be inserted into the chosen humeral component.
- A collar, either stippled hydroxyapatite coated or smooth uncoated, must be used to avoid migration of the humeral component into the humerus.
- **B** Holding the chosen proximal humeral component in two hands with the spigot pointing upwards, insert the required collar (stippled hydroxyapatite coated or smooth uncoated) over the humeral component, ensuring that the alignment lugs are properly engaged.
- Place the collar impactor over the collar. Using the soft ended hammer provided, impact the flat of the collar impactor with multiple sharp blows to lock the taper securely in place, taking care not to damage the bore or hydroxyapatite coating.
- **C** Insert the appropriate sized stem, ensuring the alignment lug is correctly engaged within the bore of the humeral component. Again using the soft ended hammer, apply multiple blows to the tip of the stem to lock into position.

D

- Select the appropriate head diameter required. The humeral head size should mimic as closely as possible the native humeral head size including the cartilage.

- D** Place the hemi-head component onto the humeral component, ensuring the alignment lug is correctly aligned.

- Using the appropriate length screw (small for small humeral component and standard for standard humeral component) insert the screw into the back of the humeral component so that it leads into the humeral head.
- Do not use a hammer to fix the head onto the proximal humeral component as this will damage the bearing surface.

- E** Tighten using the T-handled Allen/Hex key provided so that it is securely attached.

- The humeral component is now ready for insertion.
- Insert the humeral component and cement securely into place ensuring correct rotational alignment.
 - NOTE:** It is recommended that a cement restrictor is used and the entire stem cemented.
- Finally, reattach any available soft tissue to the implant (if using the railed option) using a suitable suture.

E

A



B



C



D



2.6.1.2 Humeral component + integral shaft/stem

- A** For resections of 76mm (small humeral component) and 77mm (standard humeral component), the integral shaft/stem construct can be used with the chosen humeral component.
 - Integral shaft stem constructs are available in stippled hydroxyapatite coated versions.
- B** Holding the chosen proximal humeral component in two hands with the spigot pointing upwards, insert the appropriate sized integral shaft stem construct, ensuring the alignment lug is properly engaged within the bore of the humeral component.
 - Using the soft ended hammer, apply multiple blows to the tip of the stem to lock the taper securely in place.
 - Select the appropriate head diameter required. The humeral head size should mimic as closely as possible the native humeral head size including the the cartilage.
- C** Place the hemi-head component onto the humeral component, ensuring the alignment lug is correctly aligned.
 - Using the appropriate length screw (small for small humeral component and standard for standard humeral component) insert the screw into the back of the humeral component so that it leads into the humeral head.
 - Do not use a hammer to fix the head onto the proximal humeral component as this will damage the bearing surface.
- D** Tighten using the T-handled Allen/Hex key provided so that it is securely attached.
 - The humeral component is now ready for insertion.
 - Insert the humeral component and cement securely into place ensuring correct rotational alignment.
 - NOTE:** It is recommended that a cement restrictor is used and the entire stem cemented.
 - Finally, reattach any available soft tissue to the implant (if using the railed option) using a suitable suture.

**A****B****2.6.2 Resections > 80mm**

- Hold the chosen proximal humeral component in two hands with the spigot pointing upwards. Insert the taper of the principal shaft component into the proximal humeral spigot. Ensure the alignment lug is properly engaged.
- A** Place the collar impactor over the shaft and using multiple sharp blows with the soft hammer provided, impact the flat of the collar impactor as shown, to lock the taper securely into place.
- B** Place the selected collar onto the distal end of the shaft ensuring once again the alignment lugs are correctly aligned. Resting the collar impactor over the collar, impact again using multiple sharp hammer blows, taking care not to damage the bore or hydroxyapatite coating.



C Finally, insert the appropriate sized stem, ensure the alignment lug is correctly located and impact the end of the stem.

— Select the appropriate head diameter required. The humeral head size should mimic, as closely as possible, the native humeral head size including the cartilage.

D Place the hemi-head component onto the humeral component, ensuring the alignment lug is correctly aligned.

— Using the appropriate length screw (small for small humeral component and standard for standard humeral component), insert the screw into the back of the humeral component so that it leads into the humeral head.

— Do not use a hammer to fix the head onto the proximal humeral component as this will damage the bearing surface.

E Tighten using the T-handle Allen / Hex key provided so that it is securely attached.

— The humeral component is now assembled and ready for insertion.

— Insert the humeral component and cement securely into place ensuring correct rotational alignment.

NOTE: It is recommended that a cement restrictor is used and the entire stem is cemented.

— Finally, reattach any available soft tissue to the implant (if using the railed option) using a suitable suture.

The linked glenoid proximal humeral replacement is designed for stable function restoring up to two thirds of normal movement. It prevents subluxation of the humerus and it is recommended when the majority of soft tissue coverage surrounding the humeral head is sacrificed.

The Proximal Humeral Total Shoulder Replacement is a reversed, fixed fulcrum assembly consisting of a glenoid component and the corresponding humeral component.

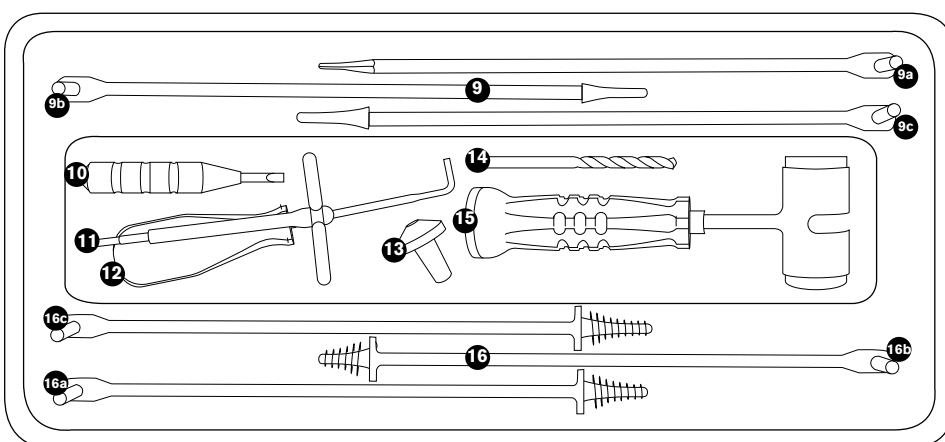
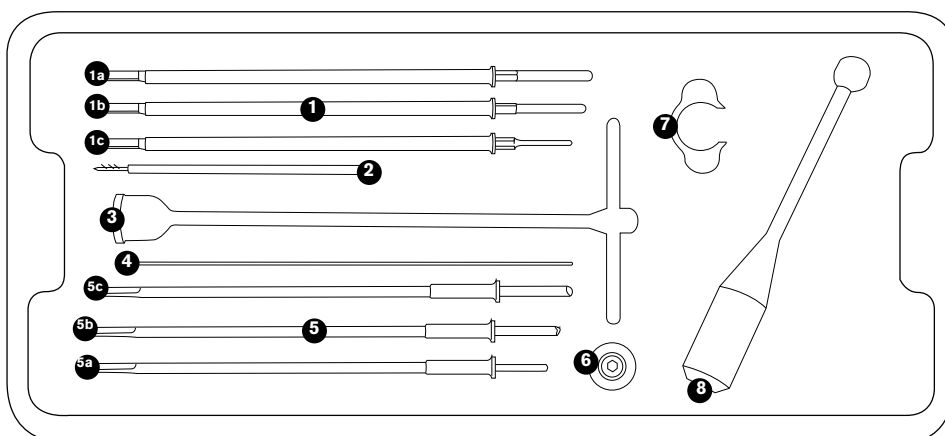
- The glenoid component has a titanium alloy tapered hydroxyapatite coated screw for cementless fixation and a Ø22.2mm cobalt-chrome-molybdenum head which articulates with a self-captive UHMWPE liner, preassembled within the humeral component.
- The glenoid component is available in three sizes (extra small, small and standard) and can be used for left and right sides.
- The linked glenoid humeral component is made of titanium alloy. An ultra high molecular weight polyethylene (UHMWPE) liner is preassembled within the head of the humeral component for articulation with the glenoid component.
- Secure assembly of the glenoid and humeral components is maintained by using the titanium retaining ring.

The linked glenoid proximal humeral component is single-sized and available in left and right sides. It can be used with all glenoid sizes.

The size of the glenoid component should be selected intra-operatively on the basis that the best stable fit is achieved. The HA coated threaded lag screw should just perforate the cortex of the glenoid.

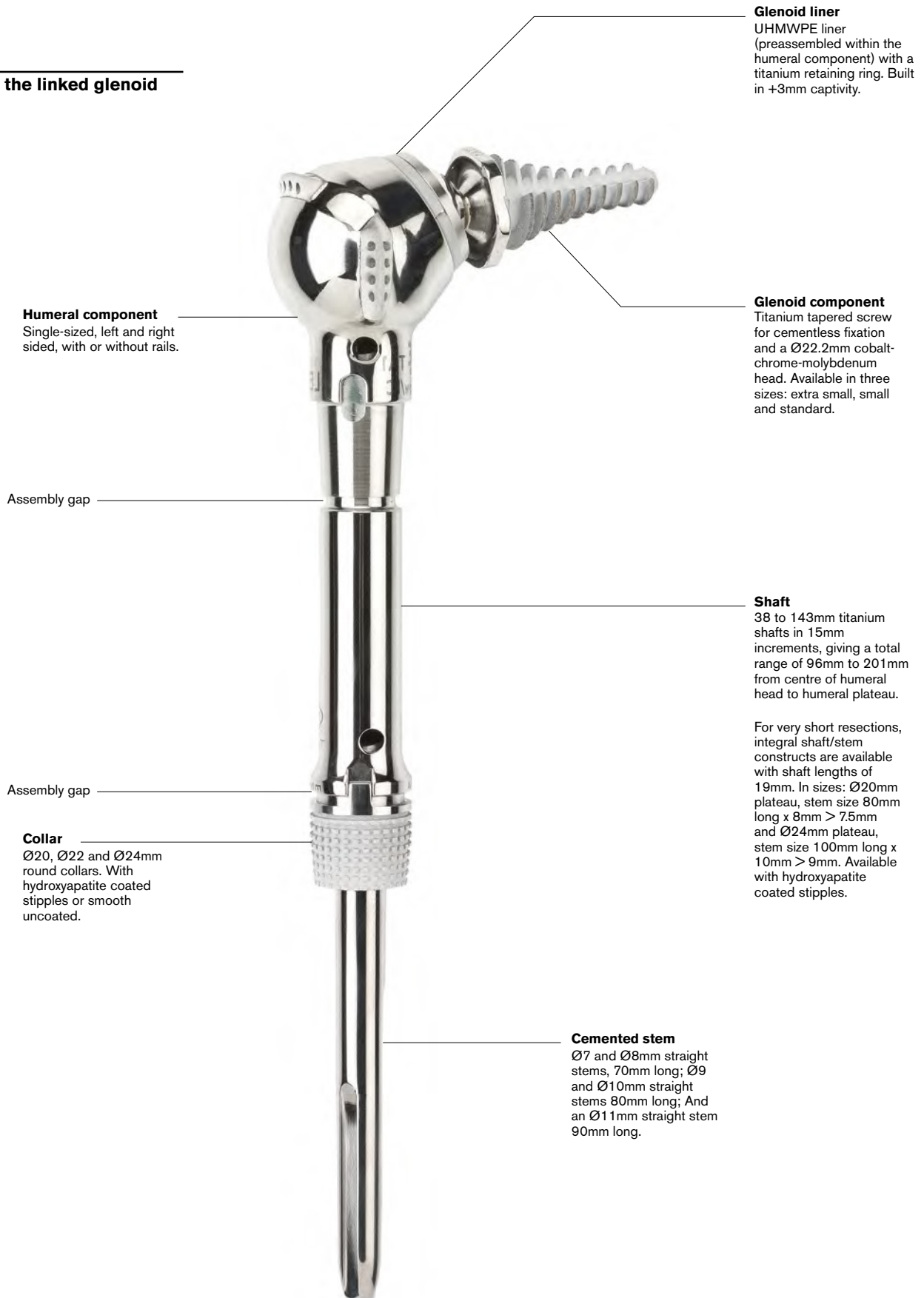
3.1 Specialised instruments for the linked glenoid option

There are a number of specialised instruments for use with the linked glenoid option.



- | | |
|---|---|
| 1 Cutter drives (1a: standard, 1b: small and 1c: extra small) | 10 Distraction tool |
| 2 2mm drill | 11 T-handled Allen / Hex key 4mm |
| 3 Box spanner | 12 Stem extractor |
| 4 2mm guide wire | 13 Collar impactor |
| 5 Cannulated drills (5a: extra small, 5b: small and 5c: standard) | 14 6mm drill |
| 6 Face cutter | 15 Hammer (with soft ends) |
| 7 Ring press tool | 16 Glenoid taps (16a: extra small, 16b: small and 16c: standard) |
| 8 Humeral pusher (Not required for the METS Proximal Humeral system) | |
| 9 Glenoid reamers (9a: extra small, 9b: small and 9c: standard) | |

3.2 Components of the linked glenoid proximal humerus



Humeral component
Single-sized, left and right sided, with or without rails.

Glenoid liner
UHMWPE liner (preassembled within the humeral component) with a titanium retaining ring. Built in +3mm captivity.

Glenoid component
Titanium tapered screw for cementless fixation and a $\text{\O}22.2\text{mm}$ cobalt-chrome-molybdenum head. Available in three sizes: extra small, small and standard.

Assembly gap

Shaft
38 to 143mm titanium shafts in 15mm increments, giving a total range of 96mm to 201mm from centre of humeral head to humeral plateau.

Assembly gap

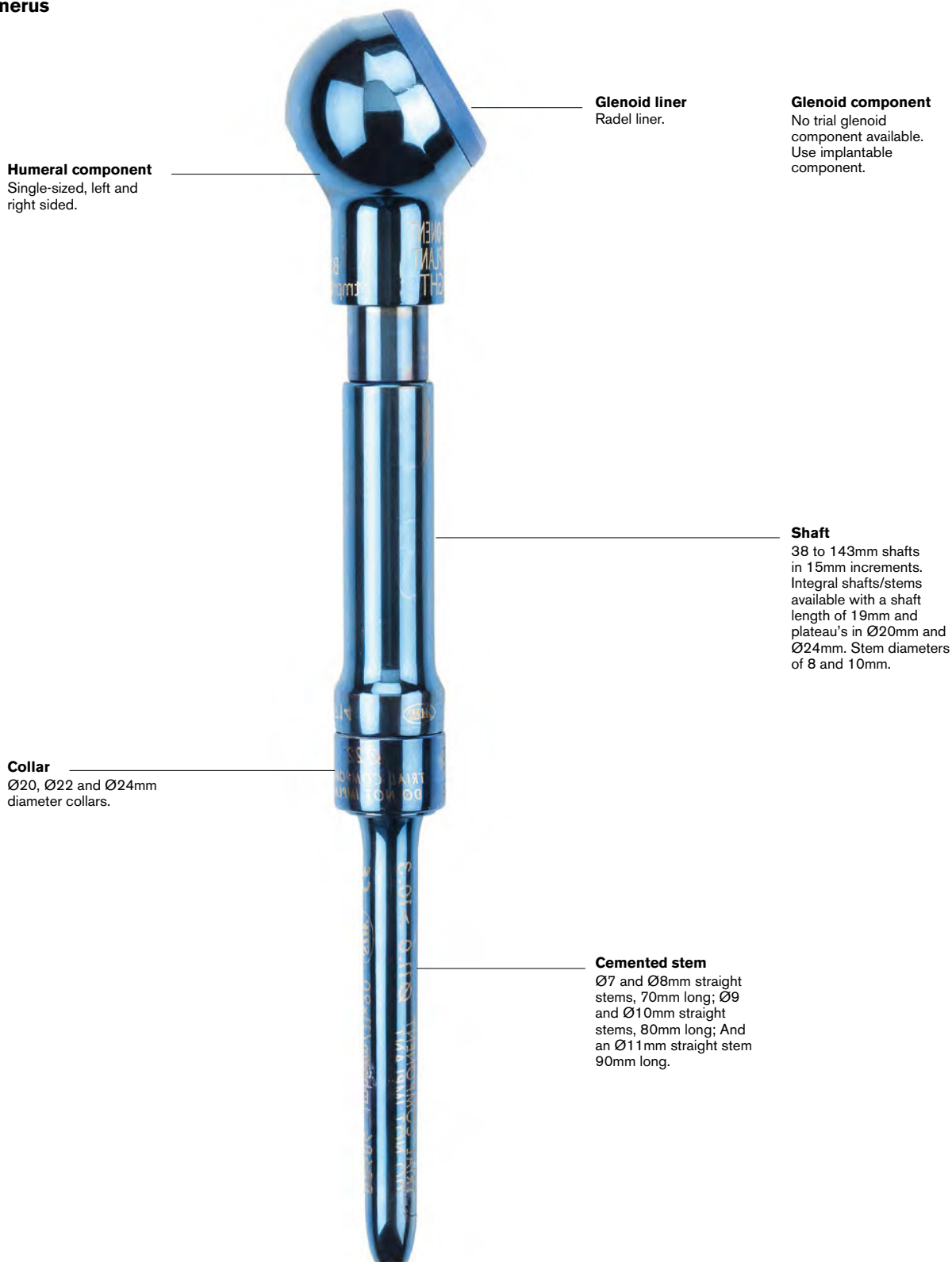
For very short resections, integral shaft/stem constructs are available with shaft lengths of 19mm. In sizes: $\text{\O}20\text{mm}$ plateau, stem size 80mm long x 8mm > 7.5mm and $\text{\O}24\text{mm}$ plateau, stem size 100mm long x 10mm > 9mm. Available with hydroxyapatite coated stipples.

Collar
 $\text{\O}20$, $\text{\O}22$ and $\text{\O}24\text{mm}$ round collars. With hydroxyapatite coated stipples or smooth uncoated.

Cemented stem
 $\text{\O}7$ and $\text{\O}8\text{mm}$ straight stems, 70mm long; $\text{\O}9$ and $\text{\O}10\text{mm}$ straight stems 80mm long; And an $\text{\O}11\text{mm}$ straight stem 90mm long.

Note: Each shaft length has 2.5mm assembly gap included in the shaft lengths. This gap has been built into the length of the trials.

3.3 Trial components of the linked glenoid proximal humerus



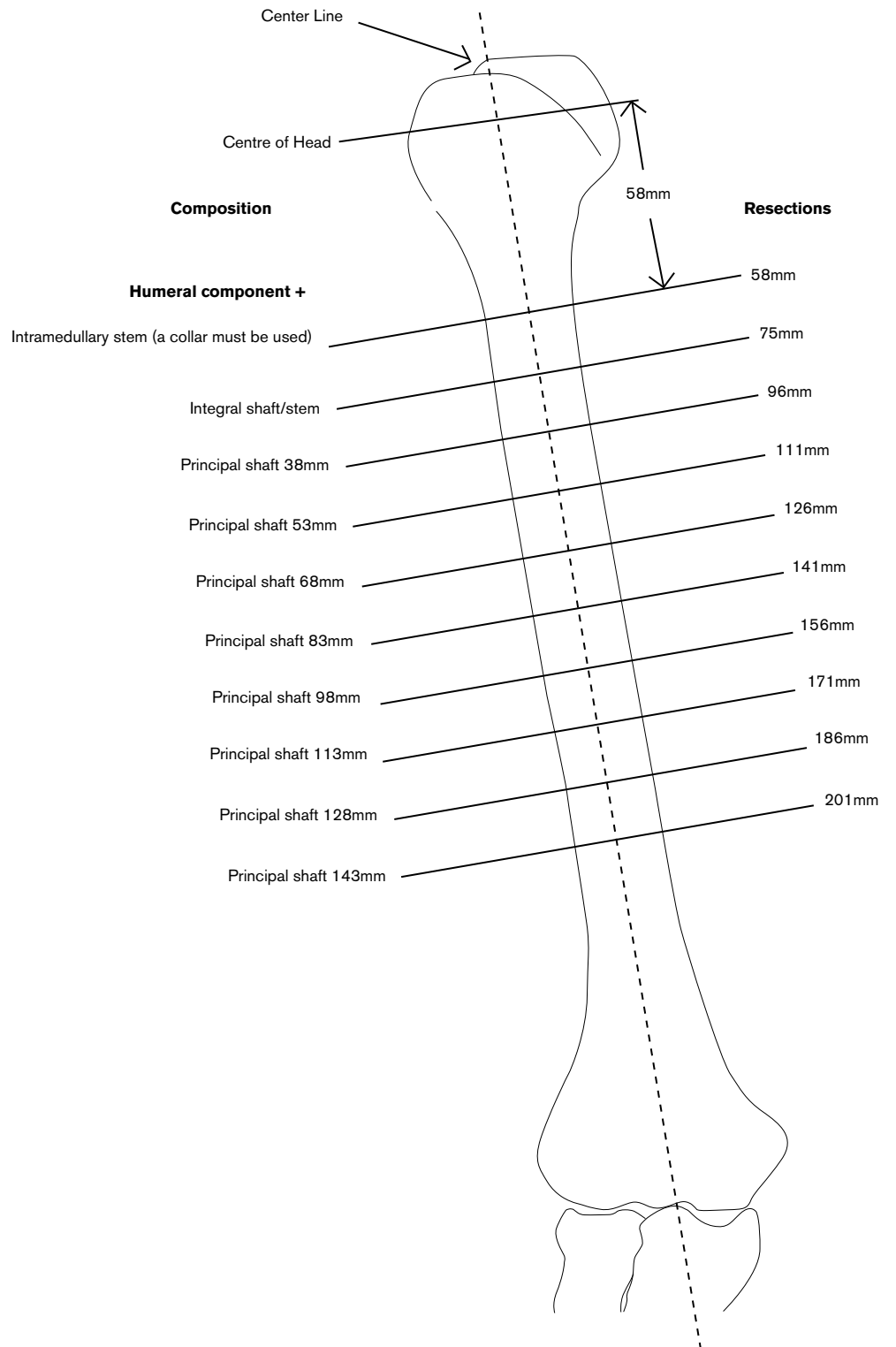
Note: Each shaft length has 2.5mm assembly gap included in the shaft lengths. This gap has been built into the length of the trials.

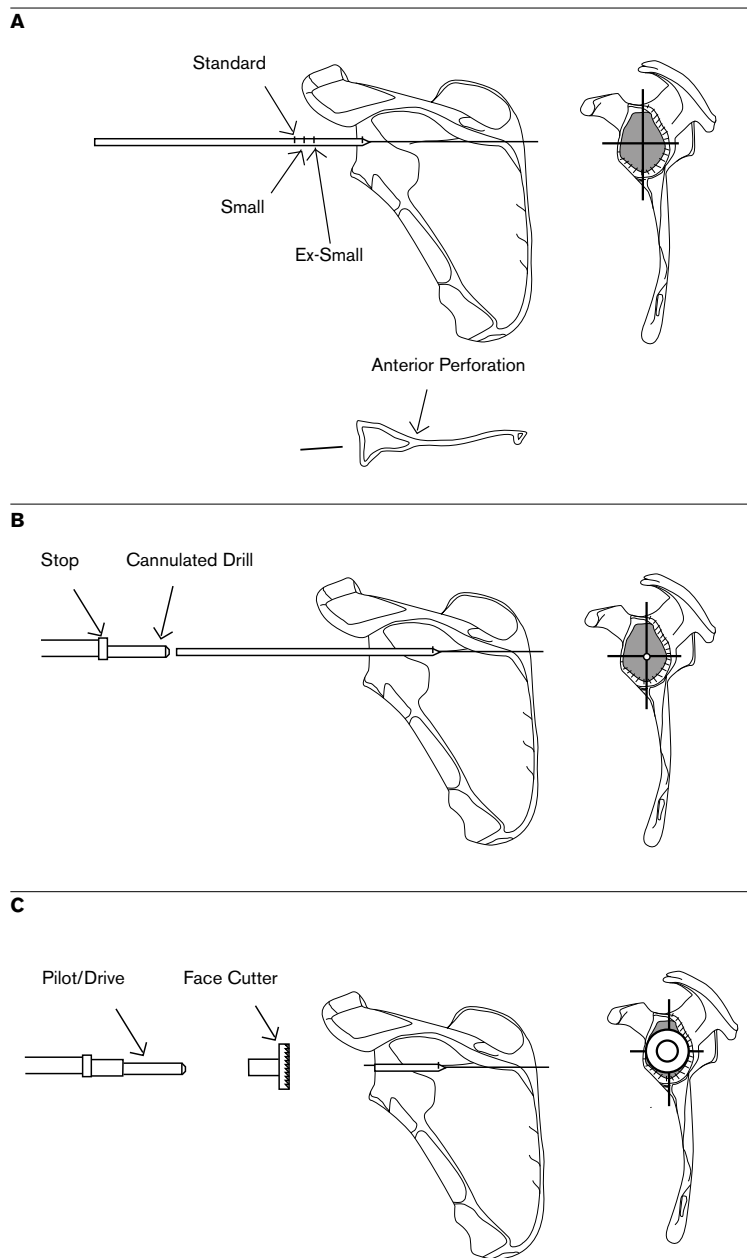
3.4 Bone preparation

**3.4.1 Humeral resection levels:
linked glenoid option**

It should be noted that collar lengths are included in the resection values.

Resection lengths are for guidance only. Please use implant trials to assess overall limb length





3.4.2 Glenoid preparation (linked glenoid option only)

With the patient positioned with the whole arm free from drapes under sterile conditions, an incision is made from the top of the coracoid in the line of delto-pectoral groove.

The incision is then deepened to open the delto-pectoral groove. The arm is then abducted and rotated externally with an angled retractor placed above the coracoid process and the humeral head is then dislocated anteriorly. Another angled retractor is placed in the subscapularis fossa retracting the tendon and subscapularis, if present, medially. Location of the anatomical neck is achieved by trimming away all osteophytes using an osteotome and a rongeur. Follow the steps below to prepare/insert the glenoid component.

3.4.2.1 Stage 1

- A** Using the 2mm drill, produce an entry hole in the centre of the glenoid surface, just deep enough to perforate the cortex and then insert the 2mm guide wire as shown. Push the guide wire as deep as possible aiming for the apex of the glenoid vault. An optimum direction is best achieved by inserting a finger at the base of the coracoid and then aiming the guide wire for the finger tip.

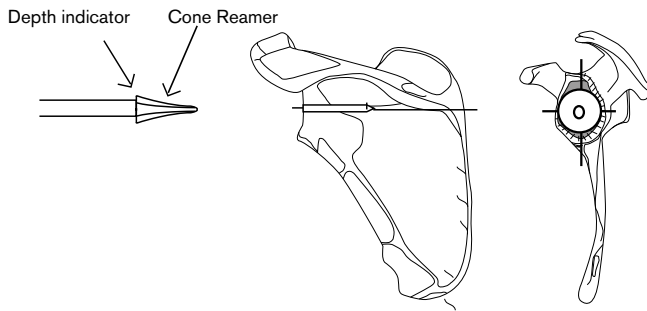
NOTE: The section view shows an optimum direction aimed to perforate the cortex at the base of the glenoid vault. Once the direction is found, determine the depth of glenoid vault in accordance with the size markers on the wire.

3.4.2.2 Stage 2

- B** With the guide wire in position, drill over the wire using the appropriate size cannulated drill to the depth indicated by the stop. The guide wire may come out with the drill. If not, remove the wire.

3.4.2.3 Stage 3

- C** Position the face cutter onto the glenoid face and insert an appropriate size pilot/drive through the cutter into previously drilled hole. Ream glenoid face to provide a square face.

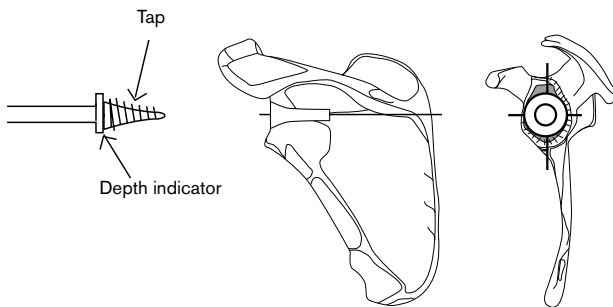
D**3.4.2.4 Stage 4**

D To optimise glenoid fixation without over sizing, use one size smaller reamer to ream the cavity and increase it progressively until satisfactory stability is felt.

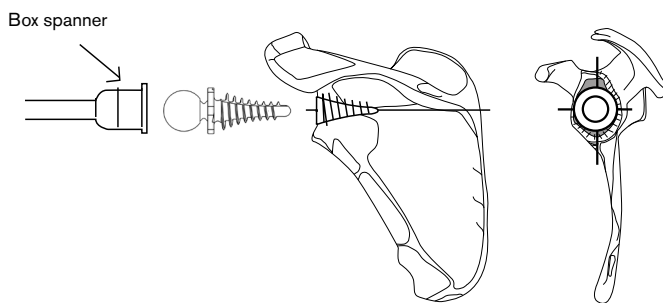
NOTE: The smallest thread gripping into the cortex is considered the optimum size.

3.4.2.5 Stage 5

E Thread the cavity to full depth using appropriate size tap. Retract tap frequently to clear threads.

E**3.4.2.6 Stage 6**

F Take correct size glenoid component and gently screw it into the cavity; initially by hand, to ensure correct thread pick-up and then, using the box spanner.

F

A**3.5 Trial assembly and insertion**

- Select the required side (left or right) proximal humeral component.
 - Select appropriate size shaft, collar and stem to replace the resected length of the humerus and assemble them as described in section 1.7 The assembly sequence should be shaft into humeral component, followed by the collar and then stem respectively.
 - Once the main body of the proximal humeral trial component is assembled, insert the plastic trial liner into the proximal humeral cavity. Using a flat screwdriver or a small osteotome, twist the slot on the back of the liner in a clockwise direction, locking the trial liner into the proximal humeral trial component.
 - Insert the proximal humeral assembly into the humerus.
 - Assemble the head of the glenoid component into the liner within the humeral component.
 - With all trial components in place, perform a trial reduction.
 - If the joint is too tight or too loose between shaft increments, it may be necessary to resect extra bone from the humerus and repeat the trial reduction.
 - Once satisfied, remove all trial components and select the corresponding implant components.
- A** During the removal of the trial implant, if the stem should become lodged within the canal and left behind, the stem extractor should be used to remove it as shown.



3.6 Implant assembly and insertion

3.6.1 Resection < 75 mm

3.6.1.1 Humeral component + intramedullary stem

- A** For resections of 58mm, the humeral stem can be inserted into the chosen humeral component. A collar, either stippled hydroxyapatite coated or smooth uncoated, must be used to avoid any migration of the humeral component into the humerus.
- B** Holding the chosen proximal humeral component in two hands with the spigot pointing upwards, insert the required collar (stippled hydroxyapatite coated or smooth uncoated) over the shaft ensuring that the alignment lugs are correctly aligned in the slots of the humeral component.
- Holding the collar impactor over the shaft, impact with multiple sharp blows using the soft ended hammer provided to lock the taper securely into place.
- Take care not to damage the bore or hydroxyapatite coating.
- C** Insert the appropriate sized stem, ensuring the alignment lug is correctly engaged within the bore of the humeral component. Again, using the soft ended hammer, apply multiple blows on the tip of the stem to lock into position.
- The humeral component is now ready for insertion. Insert the humeral component and cement securely into place ensuring correct rotational alignment.

NOTE: It is recommended that a cement restrictor is used and the entire stem cemented.
- Finally, reattach any available soft tissue to the implant (if using the railed option) using a suitable suture.

For linked glenoid joint reduction, please refer to section 3.6.3.



3.6.1.2 Humeral component + integral shaft/stem

- **A** For resections of 75mm, the integral shaft/stem can be used with the chosen humeral component. Integral shaft/stem constructs are available in stippled hydroxyapatite coated versions.
- **B** Holding the chosen proximal humeral component in two hands with the spigot pointing upwards, insert the appropriate sized integral shaft stem construct, ensuring the alignment lug is correctly engaged within the bore of the humeral component. Using the soft ended hammer, apply multiple blows on the tip of the stem to lock the taper securely into position.
- The humeral component is now ready for insertion. Insert the humeral component and cement securely into place ensuring correct rotational alignment. **NOTE:** It is recommended that a cement restrictor is used and the entire stem cemented.
- Finally, reattach any available soft tissue to the implant (if using the railed option) using a suitable suture.

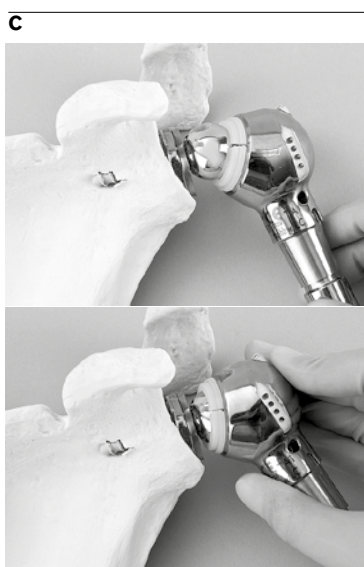
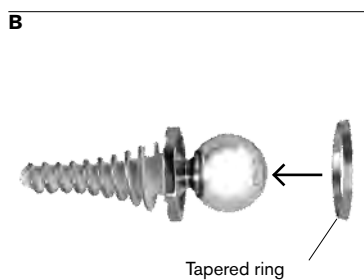
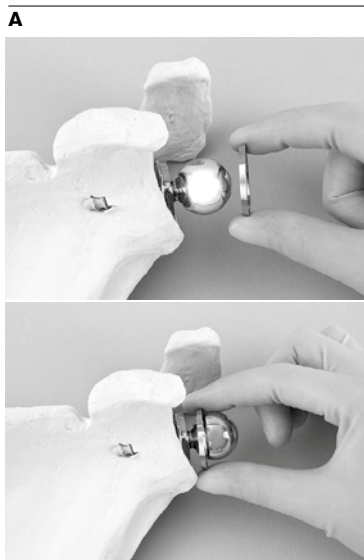


For linked glenoid joint reduction, please refer to section 3.6.3.

**A****B****C****3.6.2 Resection > 75mm**

- A** — Hold the chosen proximal humeral component in two hands with the spigot pointing upwards. Insert the taper of the principal shaft component into the proximal humeral spigot.
- Ensure the alignment lug is properly engaged.
- Place the collar impactor over the shaft. Using the soft hammer provided, impact the flat of the collar impactor with multiple sharp blows, to lock the taper securely into place.
- Place the selected collar onto the distal end of the shaft ensuring once again the alignment lugs are correctly aligned.
- B** — Holding the collar impactor over the collar, impact again using multiple sharp hammer blows. Take care not to damage the bore or hydroxyapatite coating.
- C** — Finally, insert the appropriate sized stem, ensure the alignment lug is correctly located and impact onto the end of the stem.
- The humeral component is now assembled and ready for insertion. Insert the humeral component and cement securely into place ensuring correct rotational alignment. **NOTE:** It is recommended that a cement restrictor is used and the entire stem cemented.
- Finally, reattach any available soft tissue to the implant (if using the railed option) using a suitable suture.

For linked glenoid joint reduction, please refer to section 3.6.3


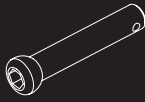


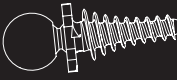


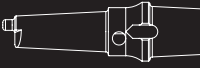





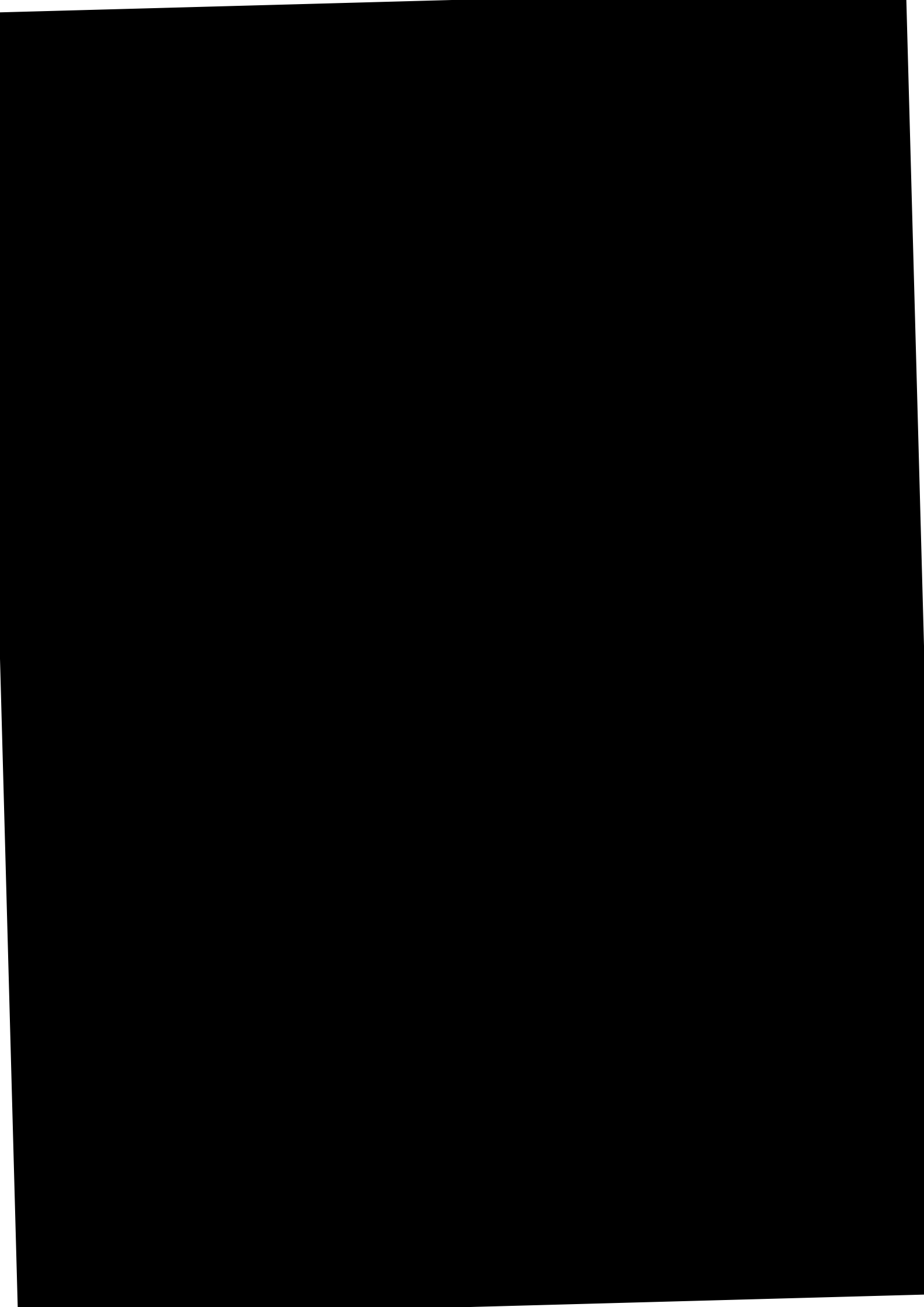
3.6.3 Linked glenoid joint reduction

- A** Place the ring over the glenoid head, ensuring the ring is orientated correctly. The larger diameter of the ring should be facing the humerus.
- B** The smaller diameter of the ring should be facing the glenoid.
- C** Assemble the glenoid head into the humeral liner, ensuring it is securely seated, thus reducing the joint.
- D** Once you are satisfied with the range of motion slide the ring press tool over the neck of the glenoid. Locate the retaining ring into the slot on the "ring press tool" and apply pressure in the direction of the plastic liner so that the ring clips into the groove.

3.7 Disassembly

During revision surgery, it may be necessary to disassemble the implant. This is achieved by inserting the distraction tool into the anterior holes of the component and impacting it with a hammer. The distraction tool has a flat, which should locate on the end of the inner spigot before impacting. **Parts are for SINGLE USE only and cannot be reused.**

Humeral Head						
for Small Humeral Component	Ø43		●	mhh/43		
	Ø46		●	mhh/46		
	Ø49		●	mhh/49		
for Standard Humeral Component	Ø52		●	mhh/52		
	Ø55		○	mhh/55		
	Ø58		●	mhh/58		
Humeral Head Fixation Screw						
for use with Small Humeral Component	Small		●	mhscw/Sml		
for use with Standard Humeral Component	Standard		●	mhscw/Std		
Hemi Humeral Component						
With reattachment	Small	Left	●	mphhm/LSmC		
For use with Hemi-head	Small	Right	●	mphhm/RSmC		
	Standard	Left	●	mphhm/LStdC		
	Standard	Right	●	mphhm/RStdC		
For use with Hemi-head	Small	Left	●	mphhm/LSmU		
	Small	Right	●	mphhm/RSmU		
	Standard	Left	●	mphhm/LStdU		
	Standard	Right	●	mphhm/RStdU		
Glenoid Component	Extra Small		●	WBGC00		
For uncemented use only	Small		●	WBGC01		
	Standard		●	WBGC02		
Linked Glenoid Humeral component with liner						
With reattachment		Left	●	mphbw/LC		
For use with Glenoid Component		Right	●	mphbw/RC		
For use with Glenoid Component		Left	●	mphbw/LU		
		Right	●	mphbw/RU		
Humeral Integral Shaft & Stem	Shaft	Stem				
Coated	L = 19mm	Ø8 > Ø7.5mm	●	mhiss/8C		
	Ø20mm plateau	L = 80mm				
Cemented use only	L = 19mm	Ø10 > Ø9.2mm	●	mhiss/10C		
	Ø24mm plateau	L = 100mm				
Humeral Shaft	38mm		●	mhsht/38		
	53mm		●	mhsht/53		
	68mm		●	mhsht/68		
	83mm		●	mhsht/83		
	98mm		○	mhsht/98		
	113mm		●	mhsht/113		
	128mm		●	mhsht/128		
	143mm		●	mhsht/143		
Humeral Collar						
Round Coated	Ø20		●	mhcol/R20C		
	Ø22		●	mhcol/R22C		
	Ø24		●	mhcol/R24C		
Round Smooth	Ø20		●	mhcol/R20S		
	Ø22		●	mhcol/R22S		
	Ø24		●	mhcol/R24S		
Humeral Stem						
For cemented use only	Ø7 > Ø6.5x70		●	mhstm/7x70		
	Ø8 > Ø7.5x70		●	mhstm/8x70		
	Ø9 > Ø8.4x80		●	mhstm/9x80		
	Ø10 > Ø9.4x80		●	mhstm/10x80		
	Ø11 > Ø10.3x90		○	mhstm/11x90		



Stanmore Implants is a fully owned subsidiary of Stryker Corporation.

A surgeon must always rely on his or her own professional clinical judgment when deciding whether to use a particular product when treating a particular patient. Stanmore Implants does not dispense medical advice and recommends that surgeons be trained in the use of any particular product before using it in surgery.

The information presented is intended to demonstrate the breadth of Stanmore Implants product offerings. A surgeon must always refer to the package insert, product label and/or instructions for use before using any Stanmore Implants product. Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. Please contact your Stryker representative if you have questions about the availability of Stanmore Implants products in your area.

The products depicted are CE marked in accordance with applicable EU Regulations and Directives.

Stryker Corporation or its divisions or other corporate affiliated entities own, use or have applied for the following trademarks or service marks: METS, Stryker. All other trademarks are trademarks of their respective owners or holders.

QL631 English ROW Issue 1 ©2020 Stanmore Implants Worldwide Ltd.

No reproduction, even partial is permitted without prior written authorisation from Stanmore Implants Worldwide Ltd.



**Stanmore Implants
Worldwide Ltd**
210 Centennial Avenue
Centennial Park
Elstree
WD6 3SJ
United Kingdom

T +44 (0) 20 8238 6500
F +44 (0) 20 8953 0617
