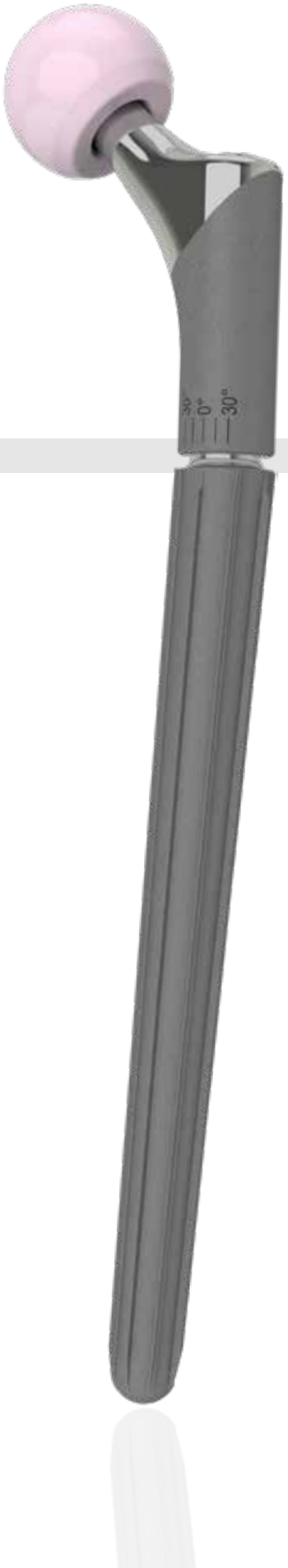
Revision
stem

SURGICAL TECHNIQUE



Lima Corporate
Orthopaedic motion

REVISION SURGICAL TECHNIQUE

Index

Limacorporate S.p.A., as manufacturer of prosthetic devices, does not practice medicine. This surgical technique has been developed in consultation with an experienced surgeon team and provides the surgeon with general guidance when implanting the REVISION femoral stem. Proper surgical procedures and techniques are necessarily the responsibility of the medical professional. Each surgeon must evaluate the appropriateness of the surgical technique used based on personal medical training, experience and clinical evaluation of each individual patient.

INDICATIONS

Revision Femoral Stem is indicated for patients whose bone stock is of poor quality or inadequate for other reconstruction techniques as indicated by deficiencies of the femoral head, neck or portions of the proximal femur. It is intended for cementless revision hip arthroplasty on both uncemented and cemented femoral implants.

Please follow the instructions for use enclosed in the product packaging.

CONTRAINDICATIONS

Joint replacement is contraindicated where there is:

- infection or sepsis;
- insufficient bone quality which may affect the stability of the implant;
- muscular, neurological or vascular deficiencies, which compromise the affected extremity;
- skeletally immature patients and cases where there is a loss of abductor musculature, poor bone stock, poor skin coverage around hip joint which would make the procedure unjustifiable;
- osteomyelitis;
- rapid joint destruction or bone adsorption apparent on roentgenogram;
- pathological conditions of the acetabulum, which would prevent achieving proper range of motion, appropriate head stability, and/or a well- seated and supported smooth articulation of the head within the acetabulum;
- alcoholism or other addictions;
- materials sensitivity;
- loss of ligamentous structures;
- high levels of physical activity (e.g. competitive sports, heavy physical labor);
- pregnancy (contraindicated for Metal on Metal application only).

RISK FACTORS

The following risk factors may result in poor results with this prosthesis:

- overweight*;
- strenuous physical activities (active sports, heavy physical work);
- fretting of modular junctions;
- incorrect implant positioning (e.g. varus positioning);
- wrong size of components;
- medical disabilities which can lead to an unnatural gait and loading of the hip joint;
- muscle deficiencies;
- multiple joint disabilities;
- refusal to modify postoperative physical activities;
- patient's history of infections or falls;
- systemic diseases and metabolic disorders;
- local or disseminated neoplastic diseases;
- drug therapies that adversely affect bone quality, healing, or resistance to infection;
- drug use or alcoholism;
- marked osteoporosis or osteomalacia;
- patient's resistance to disease generally weakened (HIV, tumour, infections);
- severe deformity leading to impaired anchorage or improper positioning of implants.

* *According to the definition of the World Health Organization (WHO), Body Mass Index (BMI) greater than or equal to 25 Kg/m^2, or have high activity levels may not be candidates for a modular hip replacement.*

PRE-OPERATIVE PLANNING

Lima Corporate products should be implanted only by surgeons familiar with the joint replacement procedures described in the specific surgical techniques.

COMBINATIONS ALLOWED / NOT ALLOWED

Allowed combination between femoral head and Revision femoral necks:

- Only the sizes S, M and L can be coupled with lateralized Revision necks (#L);
- Only the sizes S, M, L and XL can be coupled with standard Revision necks (#S).

Use of femoral heads with greater neck lengths may result in failure of the hip stem (e.g. breakage due to fatigue). Revision stems with diameter lower than 16mm (excluded) cannot be combined with Lateralized Revision necks.

Pre-operative planning, through radiographic templates in different formats (the templates and x-rays must have the same magnification), provides useful, but indicative information regarding the type and size of components to be used and the correct combination of devices required based on the anatomy and specific conditions of each patient. Inadequate pre-operative planning can lead to improper selection of the implants and/or incorrect implant positioning.

The surgeon should carefully plan surgery considering the following:

1. Smaller sized femoral implants (e.g. 14, 15 and 16 mm stems): the smaller sized femoral implants are designed for patients with a small intramedullary canal and/or diaphyseal region of the femur. The reduced size (diameter) of these stems results in a corresponding reduction in the fatigue strength of the implant;
2. High Offset combinations (use of lateralized modular necks): the lateralized necks are designed to restore the functional offset of the hip joint, however greater neck lengths are accompanied by a higher risk of failure (e.g. breakage due to fatigue).

Note. *Complications or failures of the total hip replacement are more likely to occur in heavy and highly active patients and high offset combinations.*

The surgeon should perform a careful evaluation of the patient's clinical condition and level of physical activity before performing hip replacement.

Note. *Patients who are overweight (BMI >25 kg/m2) or have high activity levels may not be candidates for a modular hip replacement.*

In case of bone loss or insufficient femoral bone stock, bone grafting or other adjunctive reinforcement procedures is advisable to provide proximal support to the stem.

This is necessary because, without proximal support, the stem is vulnerable to fracture. If proximal support cannot be achieved, an alternative surgical option should be considered. If proximal support is weak, the patient should be warned of an increased risk for potential fatigue fracture.

STEM SIZES

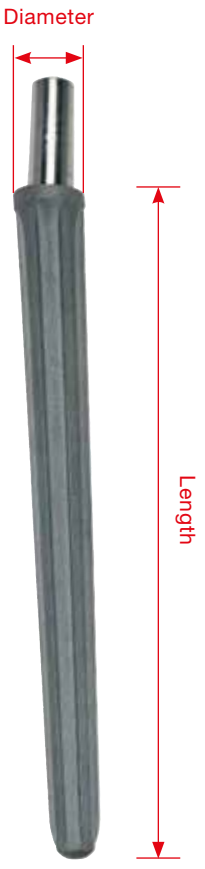
The REVISION system is comprised of 26 sizes distal components: 13 diameters from 14 mm to 26 mm, with sizes varying by 1 mm and two lengths for each diameter, 140 mm and 200 mm.

The proximal components are available in two different configurations, standard (CCD 135°) and lateralized necks (CCD 131°) and in 7 sizes from 50 mm to 110 mm of height (measured from the base of the trunk at medium level from the rotation centre), with sizes varying by 10 mm.

There is a 4° angle between the straight axis of the stem and the morse cone axis for modular connection.

By coupling the two modules, it is possible to obtain 14 combinations for each diameter, from a minimum implant length of 190 mm (stem 140 mm + neck 50 mm) to a maximum of 310 mm.

The instrument set guides the operator in the choice, simulation and correction of the overall dimensions.
Using the 40 modules it is possible to obtain 336 different implants, thus having a wide range of solutions for the anatomical adaptation of the prosthesis to the hosting femur and an adequate recovery of articular motions.



REVISION STEMS

DIAMETER	LENGTH
14 mm*	140 mm
14 mm*	200 mm
15 mm*	140 mm
15 mm*	200 mm
16 mm	140 mm
16 mm	200 mm
17 mm	140 mm
17 mm	200 mm
18 mm	140 mm
18 mm	200 mm
19 mm	140 mm
19 mm	200 mm
20 mm	140 mm
20 mm	200 mm
21 mm	140 mm
21 mm	200 mm
22 mm	140 mm
22 mm	200 mm
23 mm	140 mm
23 mm	200 mm
24 mm	140 mm
24 mm	200 mm
25 mm	140 mm
25 mm	200 mm
26 mm	140 mm
26 mm	200 mm

* Stems 14, 15 cannot be combined with lateralized necks (test according to ISO 7206-4)

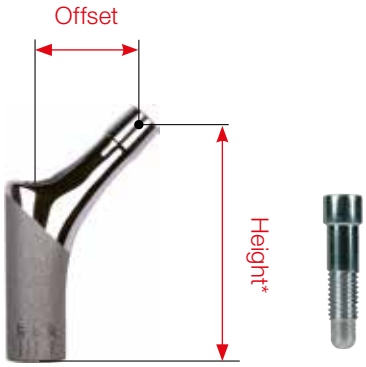
REVISION SURGICAL TECHNIQUE

Stem Sizes

REVISION NECKS

STANDARD – 135°:
offset table with head M (+0 mm)

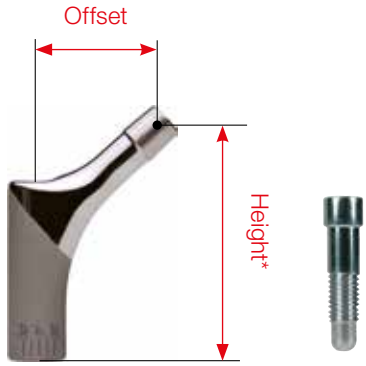
NECK HEIGHT*	OFFSET (mm) -4°	NEUTRAL STD	+4°
■ 50	31,9	35,4	38,7
60	31,3	35,4	39,3
70	30,6	35,4	40,0
80	29,9	35,4	40,7
90	29,2	35,4	41,4
100	28,6	35,4	42,1
110	27,9	35,4	42,8



CCD 135°

LATERALIZED - 131°:
offset table with head M (+0 mm)

NECK HEIGHT*	OFFSET (mm) -4°	NEUTRAL STD	+4°
■ 50	36,7	40,2	43,5
60	36,1	40,2	44,1
70	35,4	40,2	44,8
80	34,7	40,2	45,5
90	34,0	40,2	46,2
100	33,3	40,2	46,9
110	32,6	40,2	47,6



CCD 131°

Allowed combination between Femoral head and Revision femoral necks:

- only the sizes S, M and L can be coupled with lateralized Revision necks (#L);
- only the sizes S, M, L and XL can be coupled with standard Revision necks (#S).

* Nominal

■ Upon Request

PRE-OPERATIVE PLANNING

Pre-operative planning is of fundamental importance for establishing the ideal length of the implant and the correct diameter of the final stem.

STEM DIAMETER

Position the pre-surgical templates over the X-rays of the implant to be replaced, so that the fins circling the stem penetrate the endosteal cortical to a depth of about 1 mm.

Note. *The final and correct stem size must be determined during surgery. Where it is possible to match the size planned, the height of the positioning has to consider the soft tissue tension during trial reduction, and the quality of the bone.*

STEM LENGTH

In order to accurately assess how deeply the stem descends into the femur, it is advisable for the pre-surgical planning to be performed on an X-ray of the femur also in the lateral position, so as to carefully position the distal end of the stem, and thus respect the shape of the medullary cavity along the curvature of the femur.
The distal end of the implant must fit the femur to a depth of at least 70-100 mm.

REVISION SURGICAL TECHNIQUE

Pre-operative Planning

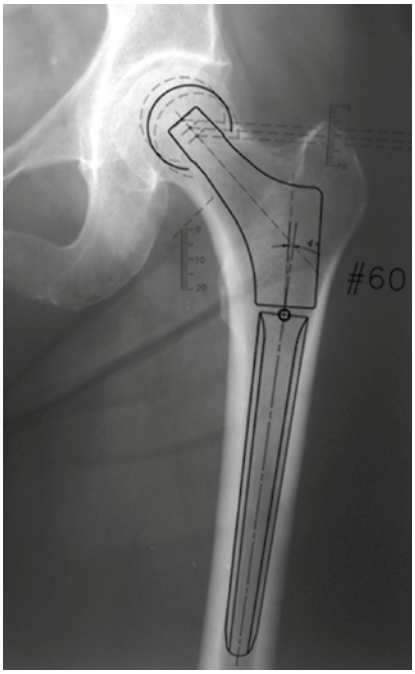


Figure 1

NECK HEIGHT AND OFFSET

Once the template of the stem is properly positioned, using a frontal X-ray, select the appropriate neck size by lining up the tip of the greater trochanter with the center of the femur head *(Figure 1)*.

When choosing the neck, bear in mind that it may be necessary to modify the lever arm offset and the length of the limb.

It goes without saying that decisions made in the planning stage are always subject to modification during surgery.

If using the trans-femoral approach, it is advisable to accurately measure the length of the stem to be removed (as a rule, the X-ray images are magnified by 13-15%, so after measuring the length of the stem, divide the value by 1.13-1.15).
This measurement will be useful for establishing how long to make the diaphysectomy, if required.

Instead of conventional templates, a digital version compatible with most surgical planning software is also available.

Figure 2

Figure 3

Figure 4

Figure 5

FEMORAL REAMING

Assemble the smallest reamer, size 12 *(Figure 2)*, to the *T-Long handle (Figure 3)* and start reaming *(Figure 4)*.

In case of bone plugs, an initial reamer *(Figure 5)* can be used to bore through bone plugs smoothing out any unevenness and avoid malalignment.
Switch to progressively larger diameter reamers until cortical bone shavings are found on the reamer handle.

If possible, a radiographic monitoring is suggested. In case of extended trochanteric osteotomy, the reamers must bore a deep enough seat to give the stem a distal fit of at least 70-100mm beyond the window.

It is suggested to use hand reaming instead of power reaming to avoid any possible fracture of the femur.

REVISION SURGICAL TECHNIQUE

Femoral Reaming

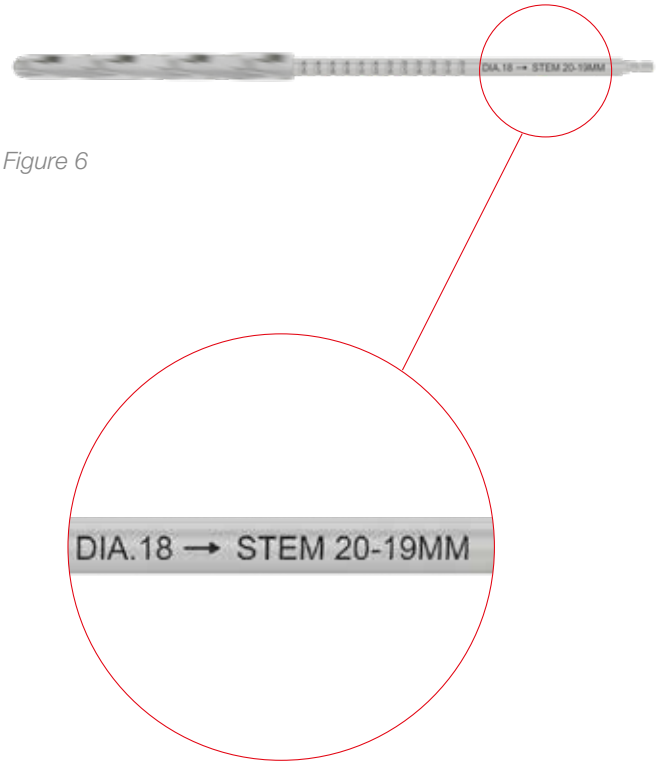


Figure 6

Figure 7

The reamers are available in 1mm increments from dia. 12mm (reamer diameter) to dia. 25mm (reamer diameter).
The reamer shaft shows the suggested definitive diameter *(Figures 6-7)*.

Note. *Routinely the choice would be to select two size larger than the last reamer diameter used, for instance, dia. 18mm reamer for 20mm stem.*

If the bone trophism requires less press-fit, the choice would be to select one size larger than the last reamer diameter used, for instance, a dia. 18mm reamer for 19mm stem.

SUGGESTED COMBINATIONS ON REAMERS HANDLE

REAMER SIZE	STEM SIZE
12	14
13	15 - (14)
14	16 - (15)
15	17 - (16)
16	18 - (17)
17	19 - (18)
18	20 - (19)
19	21 - (20)
20	22 - (21)
21	23 - (22)
22	24 - (23)
23	25 - (24)
24	26 - (25)
25	26

Table [1]

Femoral Reaming

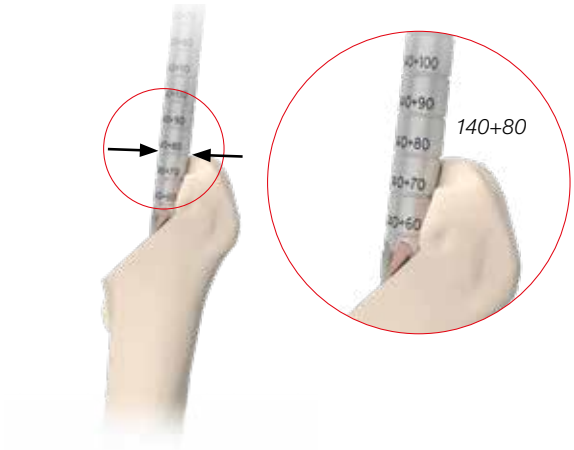


Figure 8

Figure 9

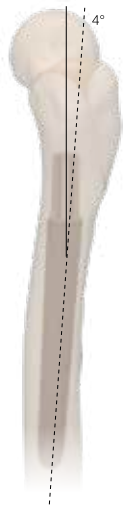


Figure 10

To select the correct stem length and proximal body height, refer to the gauge on the reamer axis at the level of the greater trochanter *(Figure 8)*, where two numbers are marked: the first refer to the length of the stem, the second to the height of the neck.

For example, if the gauges read “140+80”, the stem to be used in this case is the 140 mm length, with an 80 mm neck.

Note. *If the greater trochanter is damaged please select a different reference point in the anatomy.*

The reamer axis also provides a useful indication of how to make the best use of the implant’s 4° angle.
If the reamer axis appears anterior to the natural femural axis *(Figure 9)*, it is suggested to fit the stem with the tapered portion tilted posteriorly, thus restoring the normal femoral axis.

If conversely the reamer axis appears posterior to the natural femoral axis, it is suggested to fit the stem with the tapered portion tilted anteriorly *(Figure 10)*.

It is of course also possible for the stem to be placed with the 4 degrees oriented medially to preserve more bone in the greater trochanter area, this will decrease the CCD angle increasing the offset.

Note. *Please refer to page 8 to consult the neck sizes available.*

The surgeon must make this decision as circumstances dictate, by comparing the reamer axis with the metaepiphyseal profile of the femur.

Stem Insertion

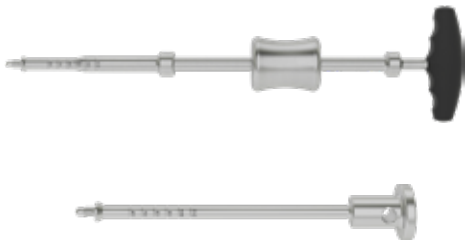


Figure 12

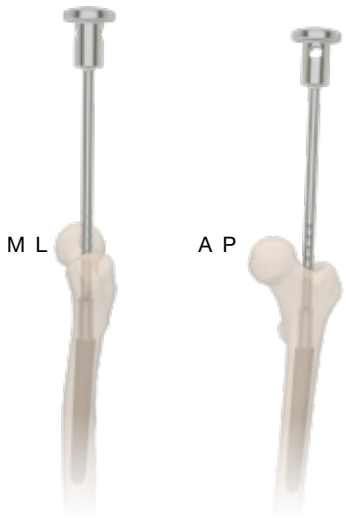


Figure 13a

Figure 13b

STEM INSERTION

Select the stem size following the indications available with *Table [1]*.

Two different impactors are available to tap the stem in the diaphyseal shaft: a *Dynamic Impactor (A22)* and a *Manual Impactor* used with a hammer *(Figure 12)*.

Screw the impactor onto the stem.

Reference the 4° peculiarity to properly insert the stem into the femur.

Push the stem into the canal. Strike down gently tapping the stem until distal fixation is obtained *(Figure 13)*.

The stem may be tighten into the canal. In this instance allow a short period of time between impactions until the stem is driven down to the required depth.

Stem Insertion

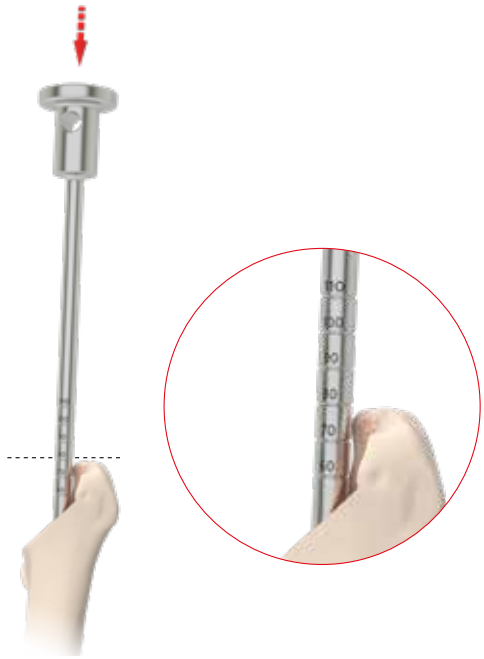


Figure 14

The impactors feature a gauge to determine how deep down the stem has to be driven *(Figure 14)*. The gauge indicates the neck sizes.

Utilizing the tip of the greater trochanter as a reference, drive the stem down until it reaches the neck height selected during the reaming stage (80 mm in our instance) and appropriate primary stability of the stem is achieved. Hammer blows should be of moderate strength.

In case the stem reaches down the pre-established level but does not give you a feeling of good fit, impact it further down until good fixation is reached (the maximimum neck height of 110mm is not exceeded).

If the stem is not stable, the surgeon can decide to go deeper with the stem or to use the next stem size up.

Note. *Please refer to page 8 to consult the neck sizes available.*

Neck Site Preparation

Figure 15

Figure 16

Figure 17

Figure 18

NECK SITE PREPARATION

To prepare the femoral neck seating, use the *Neck Reamer (E22)* for proximal reaming.

Thread the *Neck reamer guide (C22)* tight onto the stem *(Figure 15)*.

Assemble the *Allen Wrench (I22)* to the *T-Long handle (C21) (Figure 16)* and lock the *Neck reamer guide (Figure 17)*.

Assemble the neck reamer with the *T-Long handle* and start reaming the metaphysis until fully seated *(Figures 18-19)*.

Note. *During the reaming phase, the neck reamer teeth may fill up with bone. Extract and clean it before proceeding.*

Neck Site Preparation

Figure 19

To verify that the reamer is fully seated and proper reaming depth is obtained, insert a Kirschner wire (maximum diameter 2mm) through the proximal hole:

a) if it does go through, continue reaming *(Figure 20)*;
b) if it does not go through, stop reaming *(Figure 21)*.

Once completed remove reamer and guide.

Note. *LimaCorporate does not provide the Kirschner wire.*

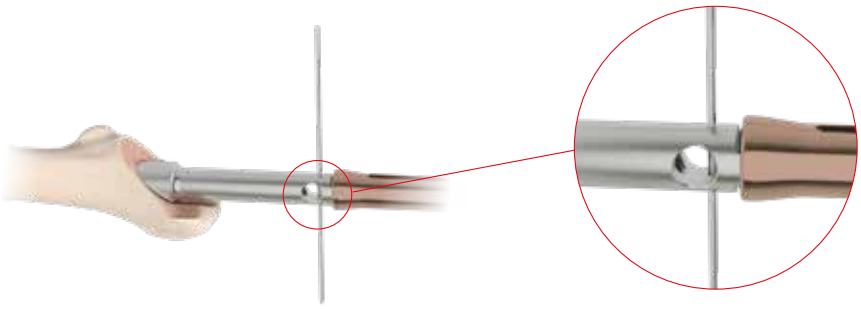


Figure 20

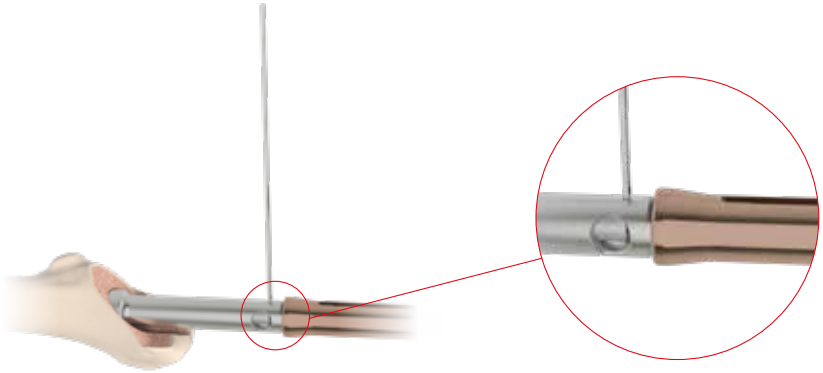


Figure 21

Trial Reduction

Figure 22

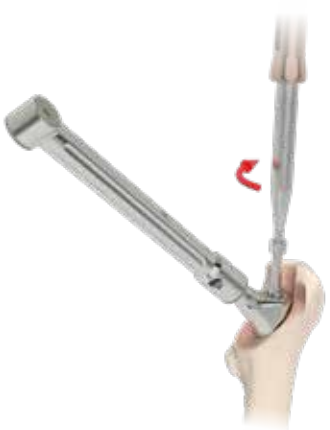


Figure 23

Figure 24

TRIAL REDUCTION

After accurately washing the stem taper junction to remove any bone debris left over from the previous stage, fit the *Trial Neck* on it choosing the size that was read previously on the *Stem Impactor* gauge *(Figure 22)*.

Carefully select the neck anteversion with the aid of the *Neck Stopper*; then tighten the neck locking screw using the *T-handle (Figure 23)*.

Uitlizing modular trial heads, perform a trial reduction *(Figure 24)*. Component position, joint stability, range of motion and leg length are checked. Assess what adjustments, if any, are required to ensure stability through a full range of motion check. When stability is achieved, use a neck trial reference to mark the bone to achieve exact definitive neck rotation positioning.

If the implant length does not fit with any trial head, downsize or upsize the neck height by 10mm.

If the height is still excessive when using a minimum size *Trial Neck* (50mm), drive the stem further down the femoral canal.

Trial necks and trial screws are color coated to facilitate the re-assembling of the screw to the neck after the cleaning phase.

Trial Reduction

Figure 25

Figure 26

If the standard neck offset does not fit for a proper articular ratio, utilize the lateralizing neck for stability.

Note. *(Test according to ISO 7206-4): The lateralized modular necks cannot be coupled with 14 and 15mm diameter stems.*

Note. *LAT necks can be coupled with modular femoral heads of maximum lenght "L", while STD can be coupled also with "XL".*

Note. *The 50mm trial neck screw is screwed on the 12/14 taper of the trial neck.*

Once the correct size of the head and neck has been selected, remove the trial neck, unscrewing the locking screw.

If it is too hard to get the trial neck out, thread the *Trial Neck Extractor (G22) (Figure 25)* onto the *Stem Impactor*. Tap the impactor to remove *(Figure 26)*.

Neck Insertion

Figure 27

Figure 28

NECK INSERTION

IMPORTANT. *Carefully clean and dry the taper junction of the distal stem ensuring it is free of debris.*

Take the final Neck of the size selected in the previous stage out of the sterile package. The neck package also contains the locking screw.

Remove the long coaxial screw (which is only meant for neck removal) from the *Neck Impactor-Extractor (E22) (Figure 27)*.

Screw the Neck Impactor-Extractor into the neck thread.

IMPORTANT. *The 50 mm definitive necks (standard and lateralized) do not have the treading hole to screw the neck impactor/extractor. Place the 50mm definitive neck by hand on the stem Morse-type taper and follow the instructions below to fit the neck on to the stem using the impactor/extractor.*

Insert the neck on the stem Morse-type taper, carefully cleaned, with the previously selected anteversion.

Gently tap the impactor along its axis using a hammer (possibly a plastic one) in order to assemble the two components *(Figure 28)*.

Once completed the impaction, unscrew the impactor and remove it.

Neck Insertion

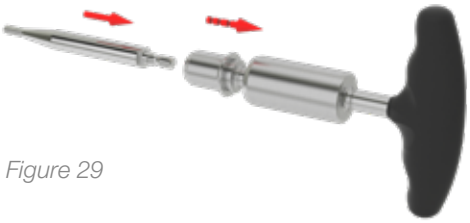


Figure 29

To grant an accurate Morse taper coupling, reducing possible occurrence of fretting phenomena and minimizing the risk of improper safety screw tightening, a *Torque Wrench* must be used.
Connect the *10N·m Torque Wrench T-handle* to the *Allen Wrech* via the Zimmer connection *(Figure 29)*.

The combined actions of the torque wrench and of the neck stopper keep any torque load from being transmitted to the femur.

Lock the safety screw turning the T-handle of the Torque Wrench clockwise while maintaining the desired anteversion with the aid of the neck stopper until the *T-handle* clicks *(Figure 30)*. This ensures that the appropriate torque has been applied and the safety screw has been fully seated. Repeat the torque application until a second click can be heard.

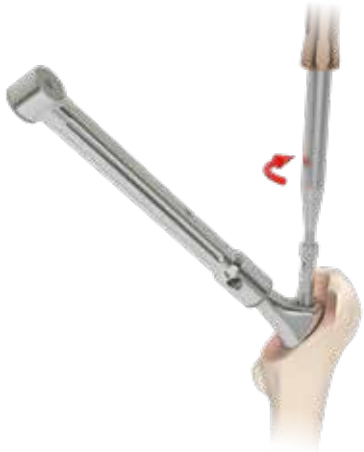


Figure 30

Note. *Before using the Torque Wrench make sure that the calibration date has not expired. The calibration date expiration is marked on the Torque Wrench T-handle.*

If a bone splint was overturned for extended trochanteric osteotomy, position it back into its original site in order to close the femoral window and reinforce it with cerclage, taking care of avoiding the direct contact between the wire and the prosthesis.

Figure 31

Figure 32

Figure 33

FEMORAL HEAD INSERTION

Clean and dry the taper thoroughly, ensuring it is free of debris. Place the appropriate femoral head onto the taper; engage it by pushing and twisting *(Figure 31)*.

Then strike the definitive head with the apposite impactor *(Figure 32)*.

Note. *The head impactor has an internal double concavity, allowing its use with all head diameters (28, 32, 36 and 40 mm).*

Clean the bearing surfaces and reduce the hip *(Figure 33)*.

Figure 34

Figure 35

Figure 36

Figure 37

COMPONENTS REMOVAL

If necessary the various prosthetic components can be removed. The femoral head can be removed by simply tapping the base of the head axially using an impactor.

DISENGAGING THE TAPER JUNCTION

1. Unscrew the safety screw *(Figure 34)*.
2. Disassemble the neck extractor's two components *(Figure 35)*.
3. Thread and tighten the outer sleeve into the REVISION neck *(Figure 36)*.
4. With the aid of the T-Long handle, screw the pushing rod (of the neck extractor) into the outer sleeve, holding in place the latter *(Figure 37)*. This will help the neck disengage from the stem.

Note. *The instructions above can be used for definitive necks with height ranging between 60mm-110mm. In case a 50mm definitive neck is implanted, instead, it cannot be separated from the stem with the impactor/extractor available in the instrument set.*

Components Removal

Figure 38

REMOVING THE REVISION DISTAL COMPONENT

Thread the Dynamic Impactor onto the REVISION distal component and, with upward movements of the slap hammer, extract the stem *(Figure 38)*.

IMPORTANT. *This method may be used in cases where biological fixation is absent or weak; otherwise, it is necessary to separate the integrated surfaces of the bone using suitable small scalpels or Kirschner wires. In some cases a Wagner femoral osteotomy may be required.*

9038.20.000 Revision Set: Reamers

Ref.	CODE	DESCRIPTION	Qty.
A20	9038.10.510	Reamer Dia. 12mm	1
A20	9038.10.515	Reamer Dia. 13mm	1
A20	9038.10.520	Reamer Dia. 14mm	1
A20	9038.10.525	Reamer Dia. 15mm	1
A20	9038.10.530	Reamer Dia. 16mm	1
A20	9038.10.535	Reamer Dia. 17mm	1
A20	9038.10.540	Reamer Dia. 18mm	1
A20	9038.10.545	Reamer Dia. 19mm	1
A20	9038.10.550	Reamer Dia. 20mm	1
A20	9038.10.555	Reamer Dia. 21mm	1
A20	9038.10.560	Reamer Dia. 22mm	1
A20	9038.10.565	Reamer Dia. 23mm	1
A20	9038.10.570	Reamer Dia. 24mm	1
A20	9038.10.575	Reamer Dia. 25mm	1
	9038.20.990	Instrument Tray	1

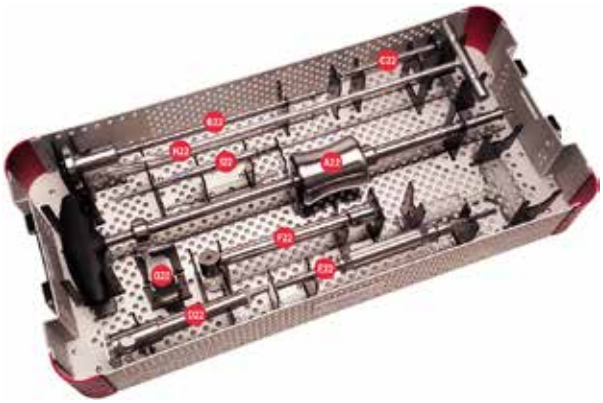
REVISION SURGICAL TECHNIQUE

Instrument Set

9038.21.000 Revision Set: Trial Necks

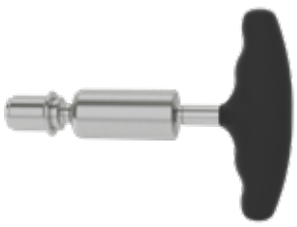
Ref.	CODE	DESCRIPTION	Qty.
A21	9038.10.650	Trial Neck H50 with Screw	1
A21	9038.10.660	Trial Neck H60 with Screw	1
A21	9038.10.670	Trial Neck H70 with Screw	1
A21	9038.10.680	Trial Neck H80 with Screw	1
A21	9038.10.690	Trial Neck H90 with Screw	1
A21	9038.10.700	Trial Neck H100 with Screw	1
A21	9038.10.710	Trial Neck H110 with Screw	1
B21	9038.10.750	Lateralized Trial Neck H50 with Screw	1
B21	9038.10.760	Lateralized Trial Neck H60 with Screw	1
B21	9038.10.770	Lateralized Trial Neck H70 with Screw	1
B21	9038.10.780	Lateralized Trial Neck H80 with Screw	1
B21	9038.10.790	Lateralized Trial Neck H90 with Screw	1
B21	9038.10.800	Lateralized Trial Neck H100 with Screw	1
B21	9038.10.810	Lateralized Trial Neck H110 with Screw	1
C21	9095.11.210	T Long Handle with Zimmer Connection	1
D21	9095.10.711	Trial Head Taper 12/14 Ø28mm S	1
D21	9095.10.712	Trial Head Taper 12/14 Ø28mm M	1
D21	9095.10.713	Trial Head Taper 12/14 Ø28mm L	1
	9038.21.990	Instrument Tray	1

9038.22.000 Revision Set: General Instruments



Ref.	CODE	DESCRIPTION	Qty.
A22	9038.10.300	Dynamic Impactor	1
B22	9038.10.305	Manual Impactor	1
C22	9038.10.115	Neck Reamer Guide	1
D22	9038.10.620	Neck Reamer	1
E22	9038.10.630	Neck Impactor-Extractor	1
F22	9043.10.370	Neck Stopper	1
G22	9038.10.250	Trial Neck Extractor	1
H22	9042.15.210	Initial Reamer	1
I22	9095.10.134	Allen Wrench for Zimmer Connection	1
	9038.22.990	Instrument Tray	1

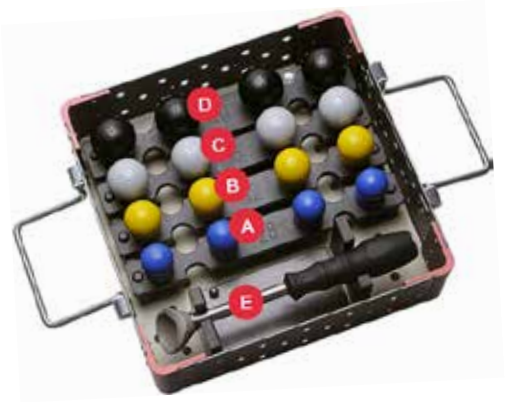
9095.11.753 Torque Wrench T-Handle



CODE	DESCRIPTION
9095.11.753	Torque Wrench T-Handle

Note: *the Torque Wrench T-Handle is supplied outside the reference instrument set. Please refer to instrument set 9038.22.000 for the correct positioning inside the tray.*

9095.50.000 Set for Trial Heads Dia. 28-40 mm ■



Ref.	CODE	DESCRIPTION	Qty.
A	9095.10.711	Trial Head Dia. 28mm S	1
A	9095.10.712	Trial Head Dia. 28mm M	1
A	9095.10.713	Trial Head Dia. 28mm L	1
A	9095.10.714	Trial Head Dia. 28mm XL	1
B	9095.10.721	Trial Head Dia. 32mm S	1
B	9095.10.722	Trial Head Dia. 32mm M	1
B	9095.10.723	Trial Head Dia. 32mm L	1
B	9095.10.724	Trial Head Dia. 32mm XL	1
C	9095.10.731	Trial Head Dia. 36mm S	1
C	9095.10.732	Trial Head Dia. 36mm M	1
C	9095.10.733	Trial Head Dia. 36mm L	1
C	9095.10.734	Trial Head Dia. 36mm XL	1
D	9095.10.741	Trial Head Dia. 40mm S	1
D	9095.10.742	Trial Head Dia. 40mm M	1
D	9095.10.743	Trial Head Dia. 40mm L	1
D	9095.10.744	Trial Head Dia. 40mm XL	1
E	9095.11.110	Femoral Head Impactor	1
	9095.50.950	Instrument Tray	1

■ Upon Request

REVISION SURGICAL TECHNIQUE

Product Codes

REVISION STEM

CODE	DIAMETER	LENGTH
3810.15.010	14 mm*	140 mm
3810.15.020	14 mm*	200 mm
3811.15.010	15 mm*	140 mm
3811.15.020	15 mm*	200 mm
3812.15.010	16 mm	140 mm
3812.15.020	16 mm	200 mm
3813.15.010	17 mm	140 mm
3813.15.020	17 mm	200mm
3814.15.010	18 mm	140 mm
3814.15.020	18 mm	200 mm
3815.15.010	19 mm	140 mm
3815.15.020	19 mm	200mm
3816.15.010	20 mm	140 mm
3816.15.020	20 mm	200 mm
3817.15.010	21 mm	140 mm
3817.15.020	21 mm	200 mm
3818.15.010	22 mm	140 mm
3818.15.020	22 mm	200 mm
3819.15.010	23 mm	140 mm
3819.15.020	23 mm	200 mm
3820.15.010	24 mm	140 mm
3820.15.020	24 mm	200 mm
3821.15.010	25 mm	140 mm
3821.15.020	25 mm	200 mm
3822.15.010	26 mm	140 mm
3822.15.020	26 mm	200 mm

* Stems 14, 15 cannot be combined with lateralized necks (test according to ISO 7206-4)

Product Codes

STANDARD NECKS WITH LOCKING SCREW (Ti6Al4V) - TAPER 12/14

CODE	HEIGHT	
7515.15.005	50 mm	■
7515.15.010	60 mm	
7515.15.020	70 mm	
7515.15.030	80 mm	
7515.15.040	90 mm	
7515.15.050	100 mm	
7515.15.060	110 mm	

LATERALIZED NECKS WITH LOCKING SCREW (Ti6Al4V) - TAPER 12/14

CODE	HEIGHT	
7515.15.105	50 mm	■
7515.15.110	60 mm	
7515.15.120	70 mm	
7515.15.130	80 mm	
7515.15.140	90 mm	
7515.15.150	100 mm	
7515.15.160	110 mm	

Allowed combination between Femoral head and Revision femoral necks:

- only the sizes S, M and L can be coupled with lateralized Revision necks (#L);
- only the sizes S, M, L and XL can be coupled with standard Revision necks (#S).

■ Upon Request

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