

Presentations and Information Material - Information Table Morphology (internal)

Difficulty	Solution
Curved femur	<ul style="list-style-type: none">• Open the greater trochanter - lateral and posterior entry point
Double sagittal curvature and/or anterior curvature	<ul style="list-style-type: none">• Pass a straight awl to rectify the curvature• Enlarge the medullary cavity at the level of the greater trochanter using conical awls
Narrow diaphyseal canal	<ul style="list-style-type: none">• Calibrate the diaphyseal canal using cylindrical awls• Note: Only turn the awl once inserted and in contact with the diaphysis so as not to damage the metaphyseal section
Coxa-Vara CCD angle <130°	<ul style="list-style-type: none">• Low resection, close to the lesser trochanter to facilitate the passage of the rasp and of the implant• Adjust the length of the limb by carefully selecting the head
Coxa-Valga CCD angle >140°	<ul style="list-style-type: none">• High resection• Adjust the length of the limb by carefully selecting the head

Presentations and Information Material - Help in choosing the type of Metabloc stem

This guide assists in deciding whether to use the cemented or uncemented version considering the objectif to exploit the advantages of the uncemented stem.

Morphology

Excellent

Normal

Mediocre

Young patient
Thick cortices of very
good bone quality
Good quality of the
cancellous bone with
good mechanical value

Middle aged patient
Good mechanical value
of the femoral cortices
Cancellous bone
present
Little or no osteoporosis

Elderly patient
Thin cortices
Rarefied cancellous
bone
Aggravated
osteoporosis
Intricate pathology
(diabetes...)

Normal

**Uncemented stem
recommended**

**Uncemented stem
possible - choice to be
made intraoperatively**

Cemented stem

CCD »130° Length of neck is in relation to size of the femur Cylindrical medullary canal	One single uncemented stem is adapted to the femur Adjustment of the limb length by choosing a prosthetic head with the appropriate neck length	One single uncemented stem is adapted to the femur Adjustment of the limb length by choosing a prosthetic head with the appropriate neck length	A cemented stem is adapted to the medullary canal Adjustment of the limb length by choosing a prosthetic head with the appropriate neck length
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**Large Offset
Narrow
Diaphysis**

Uncemented stem possible, provide that

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Cemented stem

Risk of diaphyseal blocking of the implant

The diaphyseal canal is reamed to accommodate a larger uncemented stem with the desired offset (use of the instrument tray of straight cylindrical awls)

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Choice of the uncemented implant to be made intraoperatively after evaluating the quality of the femur (bone quality, shape)

A cemented stem is adapted to the medullary canal

Adjustment of the limb length by choosing a prosthetic head with the appropriate neck length

**Small Offset,
Large Diaphysis**

Cemented stem

Cemented stem

Cemented stem

Small stem (3,4 or 6) offering the desired offset

Small stem (3,4 or 6) offering the desired offset

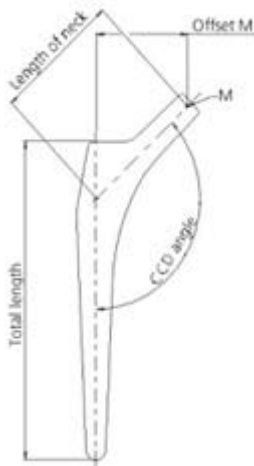
Small stem (3,4 or 6) offering the desired offset

Metabloc™ Stem

Product Information - Design & Fixation Principle



The neck length and CCD angle increase as the stem length increases. This means that physiological conditions are achieved in the hip joint as regards the lever arm.



Size	Reference of		CCD	Length of	Offset M	Total
3	35.00.49-03	21.00.49-03	131.0	56	39.2	120
4	35.00.49-04	21.00.49-04	131.5	58	40.4	126
5	-	21.00.49-05	132.0	60	41.6	132
6	35.00.49-06	21.00.49-06	132.5	62	42.8	138
7	-	21.00.49-07	133.0	64	43.9	144
8	35.00.49-08	21.00.49-08	133.5	66	45.0	150
9	-	21.00.49-09	134.0	68	46.0	156
10	35.00.49-10	21.00.49-10	134.5	70	47.1	162
11	-	21.00.49-11	135.0	72	48.1	168

11	-	21.00.49-11	135.0	72	48.1	168
12	35.00.49-12	21.00.49-12	135.5	74	49.1	174
13	-	21.00.49-13	135.5	74	49.1	174
14	35.00.49-14	21.00.49-14	135.5	74	49.1	174

Metabloc™ Stem

Uncemented Stem - Design and Fixation Principle

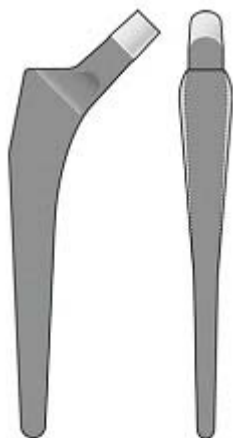


Red: uncemented stems
 Grey: body of the rasp
 Dotted line: outline of the machined rasp

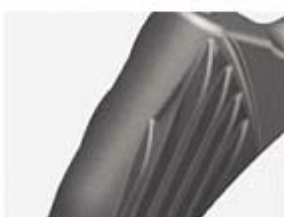
Anchoring

Press-fit effect in

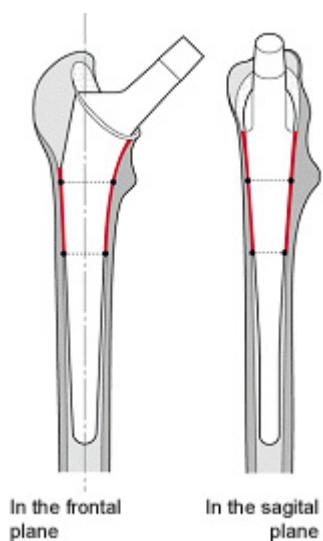
- the metaphyseal zone
- the metaphyso-diaphyseal zone



Axial stability assured by the tapered shape



Rotational stability assured by the ribs



Bone/implant contact surface

Metaphyso-diaphyseal contact always possible

Contact in the intertrochanteric zone according to the case

Design

- The sharp-edged longitudinal ribs on the proximal third of the stem become anchored deep in the metaphyseal cancellous bone, thus guaranteeing good primary stability.
- The ribs extend as far as the diaphyseal transition area, thus optimising osseointegration. The tapering of the distal third of the stem prevents contact with the cortex. This prevents distal transmission of forces.
- The prosthesis is made of a forged titanium alloy (Ti6Al7Nb/Protasul™-100). This alloy has proven its value for uncemented implant fixation many times over the years.
- The coarse-blasted titanium surface promotes secondary implant fixation by means of osseointegration.
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Range of 12 sizes

12 sizes

3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14

Sizes 3 to 12:

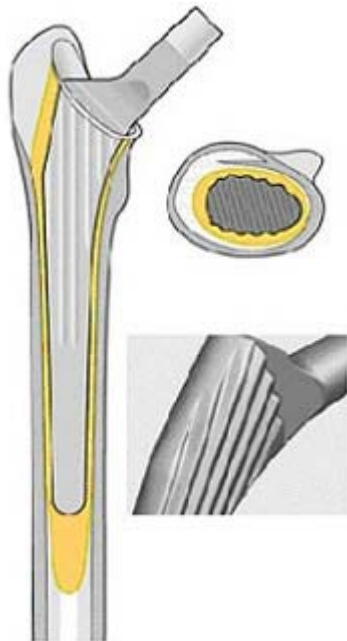
The length, width (frontal plane) and thickness (sagittal plane) of the body increase linearly with the size of the stem.

Sizes 13 and 14:

Growth in relation to size 12 is only in the sagittal plane.

Metabloc™ Stem

Cemented Stem - Design and Fixation Principle



Metabloc™ Stem

Stem entirely covered with a circular and homogenous cement bed with a thickness of 1 to 3 mm.

Design

- The proximal thickening with the rounded ribs ensures optimum distribution of forces in the cement coat and also a high degree of rotational stability.
- The conical stem design produces self-centring in the medullary cavity as well as proximal interlocking. In this way, an undesirable varus position can be avoided.
- The cemented stem is made of a forged steel alloy (FeCrNiMnMoNbN/PROTUSAL™-S30) which was developed specially for use with cement. The nickel content is only about half that of earlier alloys.
- The relatively high rigidity of Protasul™-S30 reduces unfavourable tension points in the cement coat.
- The surface of the prosthesis is finely blasted. This ensures a good bond between the implant and the cement.



Range of 7 sizes

3, 4, 6, 8, 10, 12, 14

Sizes 3 to 12:

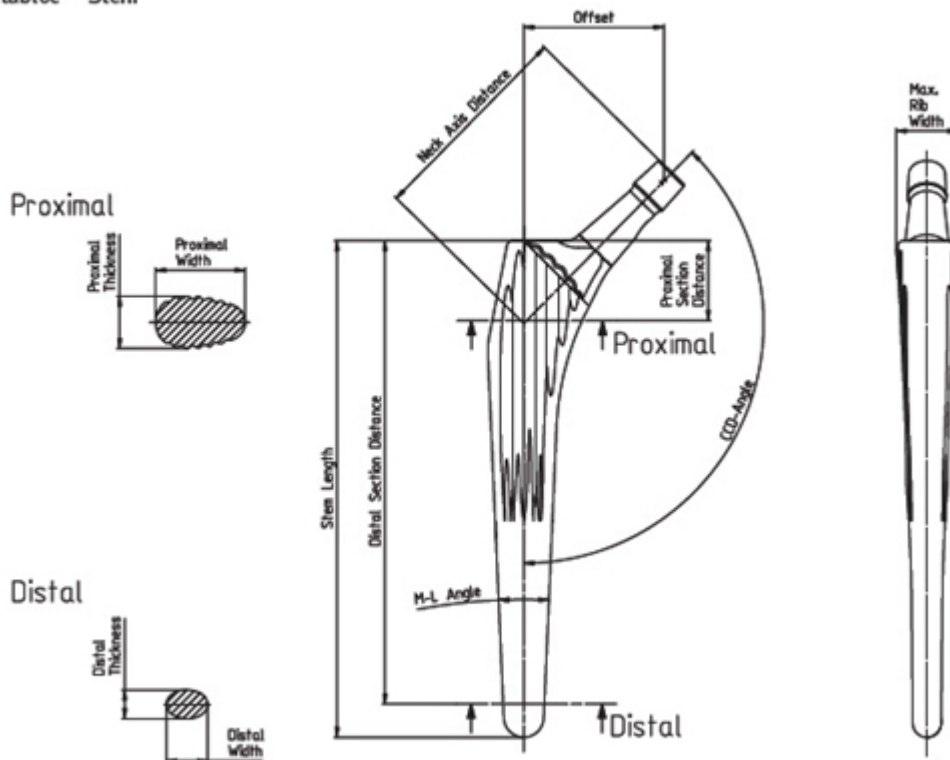
The length, width (frontal plane) and thickness (sagittal plane) of the body increase linearly with the size of the stem.

Size 14:

Growth in relation to size 12 is only in the sagittal plane.

Product Information - Technical Dimensions

Metabloc™ Stem



Uncemented Metabloc Stem

Size	Ref Number	CCD Angle (°)	Neck Length (mm)	Offset for M-Ball Head (mm)	Stem Length	M-L Angle (°)
3	21.00.49-03	131.0	56	39.2	120	5
4	21.00.49-04	131.5	58	40.4	126	5
5	21.00.49-05	132	60	41.6	132	5
6	21.00.49-06	132.5	62	42.8	138	5
7	21.00.49-07	133	64	43.9	144	5
8	21.00.49-08	133.5	66	45.0	150	5
9	21.00.49-09	134	68	46.0	156	5
10	21.00.49-10	134.5	70	47.1	162	5
11	21.00.49-11	135	72	48.1	168	5
12	21.00.49-12	135.5	74	49.1	174	5
13	21.00.49-13	135	74	49.1	174	5
14	21.00.49-14	135.5	74	49.1	174	5

Size	Proximal			Distal			Max.Rib Width (mm)
	Proximal Section Distance (mm)	Width (mm)	Thickness (mm)	Distal Section Distance (mm)	Width (mm)	Thickness (mm)	
3	19.4	24.8	18.5	111.6	7.5	5.6	21.0
4	20.4	25.4	19.0	117.4	8.1	5.8	21.3
5	21.4	25.9	19.5	123.1	8.5	6.2	21.5
6	22.3	26.4	19.8	128.8	9.2	6.6	21.7
7	23.3	26.9	20.0	134.6	9.7	7.1	22.2
8	24.2	27.4	20.3	140.3	10.3	7.5	22.4
9	25.2	27.9	20.7	146.0	10.8	7.9	22.8
10	26.1	28.4	21.0	151.8	11.4	8.3	23.1

11	27.1.	29.0	21.3	157.5	11.9	8.6	23.4
12	28.0	29.5	21.7	163.3	12.4	9.1	23.9
13	28.0	30.5	22.0	162.8	13.4	9.6	24.4
14	28.0	31.4	22.4	162.3	14.4	10.1	24.8

Cemented Metabloc Stem

Size	Ref Number	CCD	Neck	Offset for	Stem	M-I Angle
2	35.00.49-03	131.0	56	39.2	120	5
4	35.00.49-04	131.5	58	40.4	126	5
6	35.00.49-06	132.5	62	42.8	138	5
8	35.00.49-08	133.5	66	45.0	150	5
10	35.00.49-10	134.5	70	47.1	162	5
12	35.00.49-12	135.5	74	49.1	174	5
14	35.00.49-14	135.5	74	49.1	174	5

12	28.0	29.5	17.6	163.3	12.4	9.1	20.7
14	28.0	31.4	18.4	162.3	14.4	10.1	21.5