



Enjoy Mobility

S M R RESECTION

PRODUCT INFORMATION

OPERATING TECHNIQUE



SMR RESECTION

MODULAR RESECTION STEM

Limb salvage surgery is today a reliable option in the management of bone tumors.

Goals of proximal femur replacement are preservation of limb length, restoration of appropriate hip center, and achievement of satisfactory stability throughout a functional range of motion.

The Modular Resection Stem SMR Resection combines simplicity and versatility providing a wide range of reconstructive options.

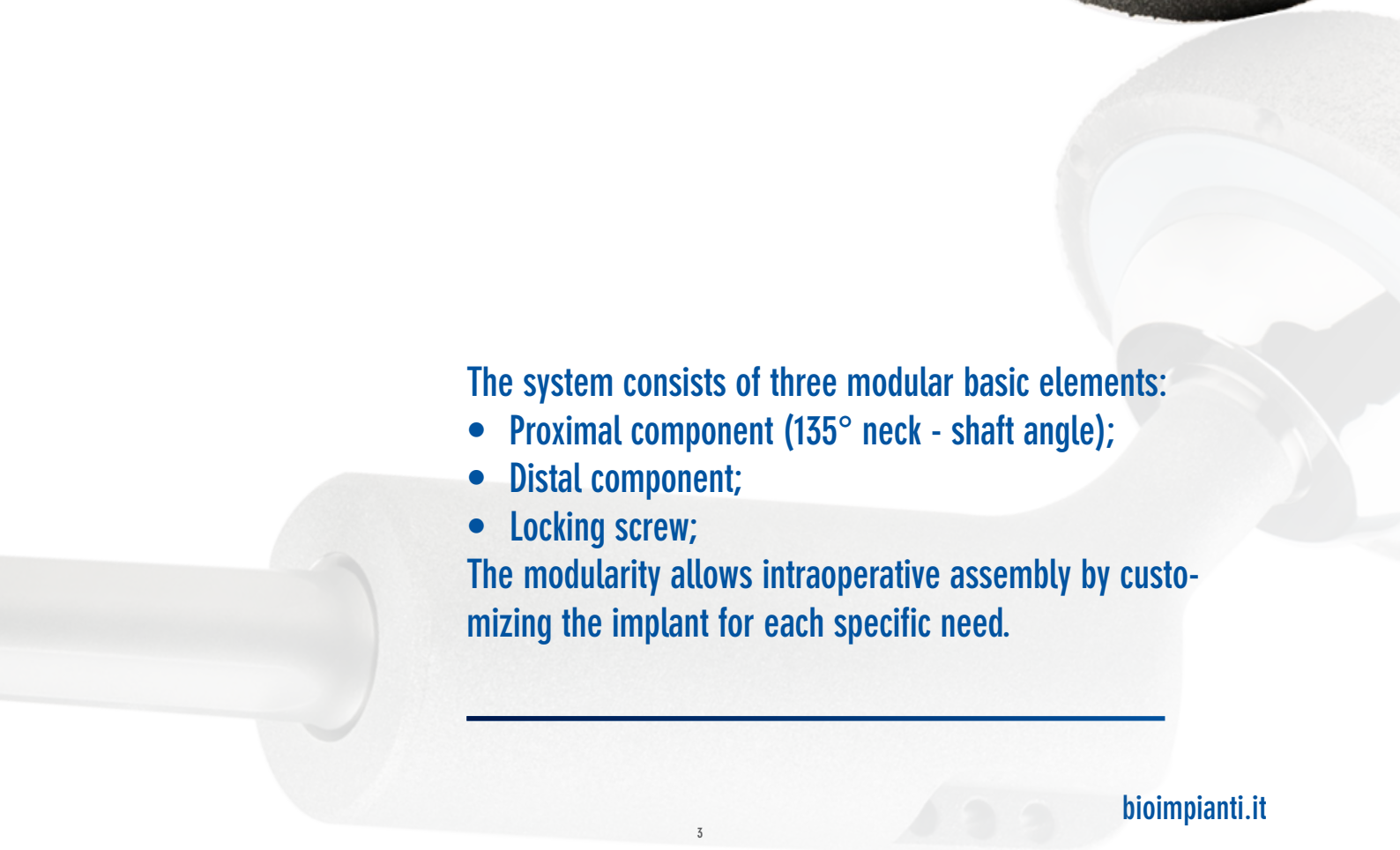




The system consists of three modular basic elements:

- Proximal component (135° neck - shaft angle);
- Distal component;
- Locking screw;

The modularity allows intraoperative assembly by customizing the implant for each specific need.



S M R RESECTION

MATERIALS

Titanium alloy Ti6Al4V Grade 5 ELI (ISO 5832-3), which ensures excellent bio-compatibility and mechanical strength.

The surface finish of the proximal component is obtained by abrasion with corundum.

PROXIMAL COMPONENT

Six lengths: 75, 100, 125, 150, 175, 200mm.

All the different lengths have a CCD 135° neck-shaft angle neck to improve the abduction lever arm optimizing hip stability.

The **HOLES** allow the passage of cerclage wires for effective muscle anchoring.

ASSEMBLY

The two components are assembled using a "Morse taper" 2°51'.

The **LOCKING SCREW** is used to hold the "Morse taper" cone in place but does not have a sealing effect, as it is the coupling of the two tapers that guarantees the seal over time. The screw has a cross bolt made of polyethylene.

Lengths: 75, 100, 125, 150, 175, 200, 225, 250, 275, 300mm.

CYLINDRICAL SPACER

An additional component can be added to the system: the 50mm cylindrical spacer.

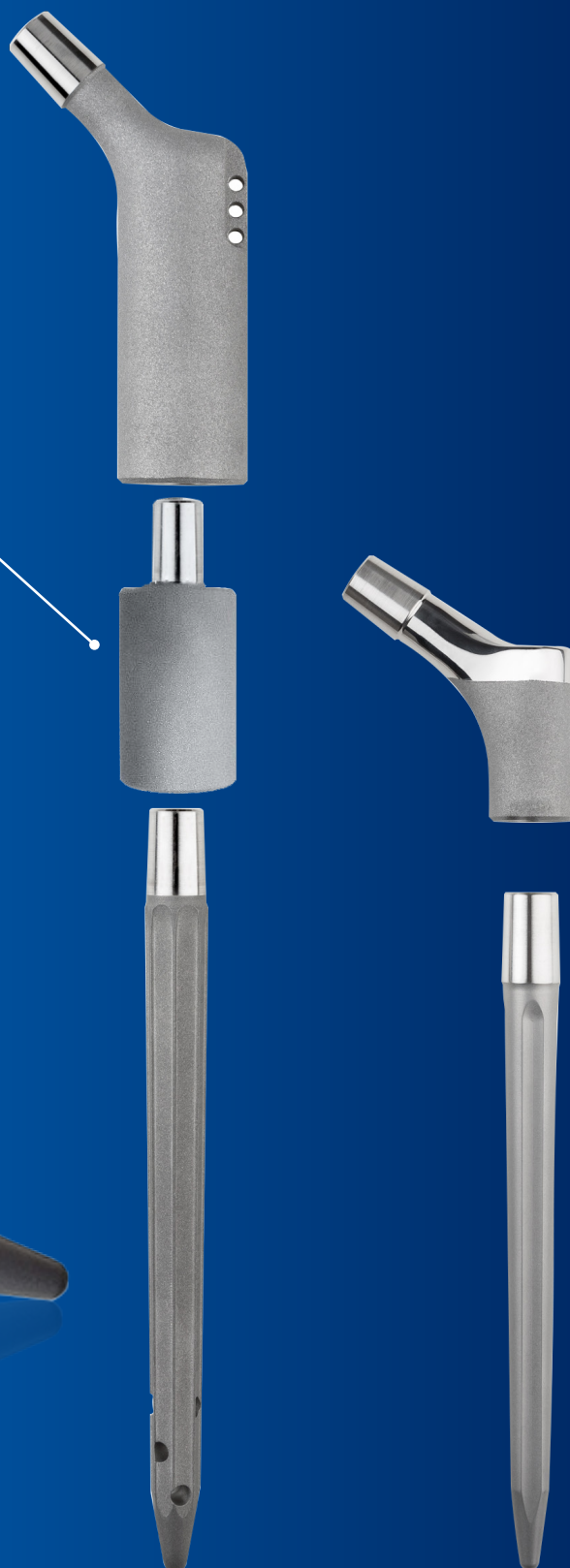
Spacers can be used, for a maximum of two pieces, only with proximal components having a length of 175mm or 200mm.

In this way, longer stem lengths (225, 250, 275, 300mm) can be achieved and even longer resections can be covered.

DISTAL COMPONENT

Four diameters: 12, 13, 14 and 16mm

Three lengths: 140, 160 and 180mm.



MODULARITY SMR RESECTION - SMR

The distal component of the SMR revision stem is also used in coupling with the proximal component of SMR Resection.

The surgeon has thus the possibility of using cemented or uncemented distal components, with different indications.

COMPATIBILITY		
Proximal component	Cylindrical Spacer	Locking screw
75mm	Not compatible	75mm
100mm	Not compatible	100mm
125mm	Not compatible	125mm
150mm	Not compatible	150mm
175mm	0	175mm
175mm	1 (+50mm)	225mm
175mm	2 (+100mm)	275mm
200mm	0	200mm
200mm	1 (+50mm)	250mm
200mm	2 (+100mm)	300mm

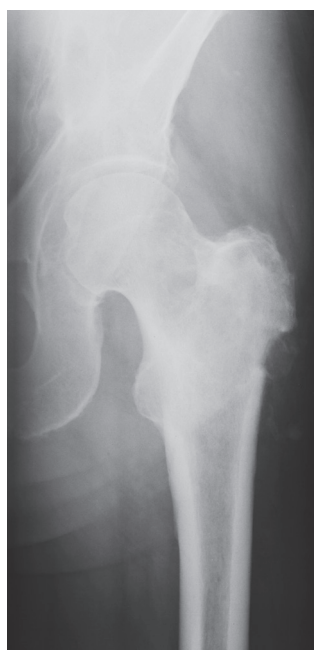
SMR RESECTION

OPERATING TECHNIQUE

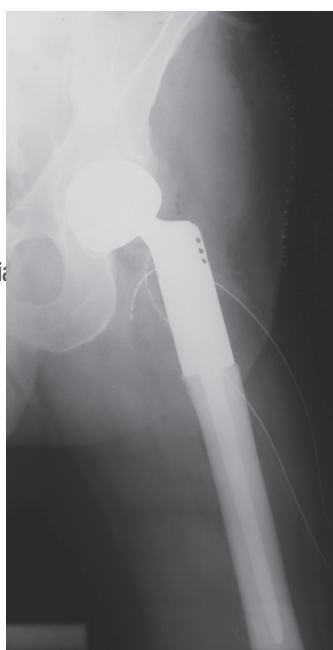
INDICATIONS: The SMR Resection stem is indicated in cancer of the proximal femur. In particular: primary malignant bone tumors not involving important neurovascular structures; metastatic tumors; benign bone tumors that have a considerable expansion in the soft tissues (stage 3) or pathological fracture. This stem is indicated for cemented implants.

CONTRAINDICATIONS: The hip joint surgery is absolutely contraindicated in cases of: systemic or local infection, sepsis, and osteomyelitis. It is relatively contraindicated in case of: Osteoporosis; Patient uncooperative or suffering from neurological disorders, unable to follow directions; Systemic disorders and/or metabolic problems that lead to a progressive deterioration of bone support; Neurological or neuromuscular disorders that could create an unacceptable risk to the prostheses instability or lead to a failure of prostheses fixation; Osteomalacia; Active infection or suspected latent infection in the hip joint; Distant focus of infection that could spread to the implant site; Vascular insufficiency, muscular atrophy, neuromuscular diseases; Incomplete or insufficient presence of soft tissue around the knee joint; Obesity; Inadequate bone stock for the prostheses support or fixation; Skeletal immaturity; Local or disseminated neoplastic diseases; Incurable severe deformities.

Preop.



Postop.



Male, age 71, grade 2 chondrosarcoma of the proximal femur.

1

Pre-operative planning

The patient is usually placed in a lateral decubitus position and the resection then carried out as dictated by each specific need. The resection specimen length is measured and compared to preoperative planning.

Limb length restoration or 1-1.5cm overlengthening should be accomplished according to the amount and quality of remaining soft tissue, in order to obtain satisfactory implant stability.

2

Trial Reduction

The shortest body allowing length restoration should be selected in order to preserve bone.

Stem length and diameter are selected according to preoperative planning and intraoperative findings.

In most circumstances we prefer bipolar, to total joint replacement. Proximal (Ref. 110266100 ÷ 110266105) and distal component (Ref. 110266022 ÷ 110266048) are assembled and then locked by the locking screw (Ref. 110266110 ÷ 110266119) using the exagonal screwdriver (Ref. 120540405) to accomplish secure fixation.

It is possible to add an additional component to the system: the cylindrical spacers (Ref. 110266107), which can be used, for a maximum of two pieces, only with proximal components having a length of 175mm or 200mm.

A trial can be carried out using an head, checking leg length and stability.

Additional 0.5 - 1cm of bone can be sacrificed to obtain the desired length and soft tissue tension.

3

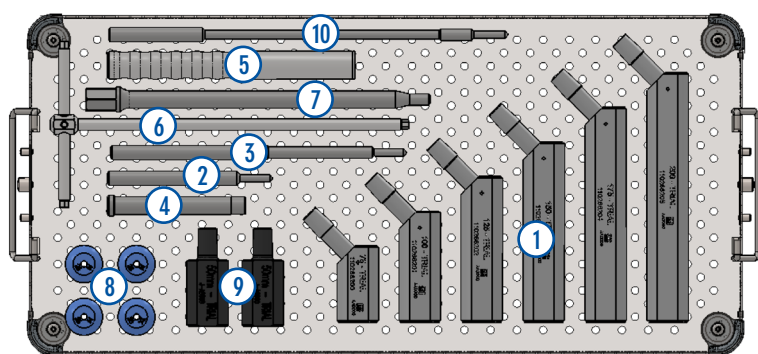
Definitive implant

The medullary canal is then prepared with the flexible reamers (Ref. 110266230* ÷ 110266237*) and the implant cemented according to the surgeon's preferred technique.

A new trial should be carried out to check again length and stability; the most satisfactory head is then selected, and the definitive implant impacted.

The hip is reduced and the closure is undertaken according to the surgeon's preference. An effort should always be made to maximize soft tissue tension by satisfactorily reattaching the remaining abductors to the fascia and/or prosthesis.

SMR RESECTION INSTRUMENT CODES



Tray for instruments
REF: 110266100

	DESCRIPTION	REF.	LENGTH	QNT
①	SMR Resection Trial Proximal component	110266200 110266201 110266202 110266203 110266204 110266205	75mm 100mm 125mm 150mm 175mm 200mm	1 1 1 1 1 1
②	SMR Resection Extractor Prox. Comp. 75/100/125mm	110266220	-	1
③	SMR Resection Extractor Prox. Comp. 155/175/200mm	110266221	-	1
④	SMR Resection Assembly Rod	110266225	-	1
⑤	Non-rotation device	120540412	-	1
⑥	Exagonal screw driver	120540405	-	1
⑦	Extension for distal SMR extraction	120540421	-	1

⑧

⑨

⑩

	DESCRIPTION	REF.	DIAM.	NECK	QNT
⑧	Trial Heads	110380860 110380870 110380880 110380890	28mm 28mm 28mm 28mm	S M L XL	1 1 1 1
⑨	SMR Resection Trial Space	110266207	-	50mm	2
⑩	SMR Resection Extractor Prox. Comp. 225/250mm	110266222	-	-	1
	DESCRIPTION	REF.	DIAM.	LENGTH	
	Zimmer Flexible Reamer SMR Resection*	110266230* 110266231* 110266232* 110266233* 110266234* 110266235* 110266236* 110266237*	10mm* 11mm* 12mm* 13mm* 14mm* 15mm* 16mm* 17mm*	300mm* 300mm* 300mm* 300mm* 300mm* 300mm* 300mm* 300mm*	1 1 1 1 1 1 1 1

SMR RESECTION IMPLANT CODES

SMR RESECTION PROXIMAL COMPONENT

REF.	CCD	LENGTH
110266100	135°	75mm
110266101	135°	100mm
110266102	135°	125mm
110266103	135°	150mm
110266104	135°	175mm
110266105	135°	200mm

FEMORAL HEAD CRCO

Diam. 28mm, cone 12/14

REF.	C.I.R.**	NECK
110210105E	- 3.5mm	S
110210110E	0mm	M
110210115E	+3.5mm	L
110210120E	+7.0mm	XL

SMR RESECTION DISTAL COMPONENT

REF.	DIAM.	LENGTH
110266022	12mm	140mm
110266024	12mm	160mm
110266026*	12mm*	180mm*
110266030	13mm	140mm
110266032	13mm	160mm
110266034	13mm	180mm
110266038	14mm	140mm
110266040	14mm	160mm
110266042	14mm	180mm
110266046	16mm	160mm
110266048	16mm	180mm

SMR RESECTION LOCKING SCREW

REF.	LONG.
110266110	75mm
110266111	100mm
110266112	125mm
110266113	150mm
110266114	175mm
110266115	200mm
110266116	225mm
110266117	250mm
110266118	275mm
110266119	300mm

CYLINDRICAL SPACER*

REF.	LENGTH
110266107*	50mm*

*Upon request
**Rotation Instantaneous Centre

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Web site

Use the QR-Code to visit Gruppo Bioimpianti website



IFU

Use the QR-Code to view complete product informations, including instructions for use, indications and contraindications, precautions and warnings



REFERENCES

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- 4) Kabukcuoglu Y., Grimer R.J. Tillmann R.M., Carter S.R. "Endoprosthetic replacement for primary malignant tumors of the proximal femur" Clin. Orthop. 1999 Jan.; (358):8-14
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This surgical technique is exclusively intended for medical professionals, especially physicians and surgeons.

This document does not constitute medical advice, it does not dispense medical recommendations and it does not convey any diagnostic or therapeutic information.

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