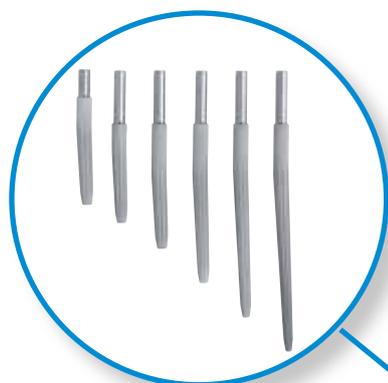
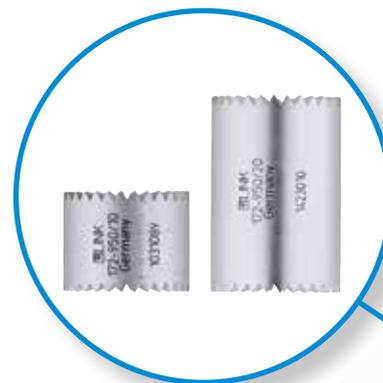


# MP Reconstruction System

Overview



Proximal spacers for leg length adjustment  
10mm, 20mm or 30mm



**Cementless**

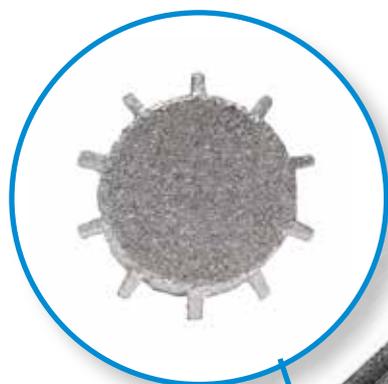
6 lengths, 160mm - 330mm  
7 diameter, 12mm - 25mm

**Curvature of the Stem**

3° Kink to follow natural femoral bow

**Conical stem following Wagner philosophy**

2° angle, ensures reliable anchoring



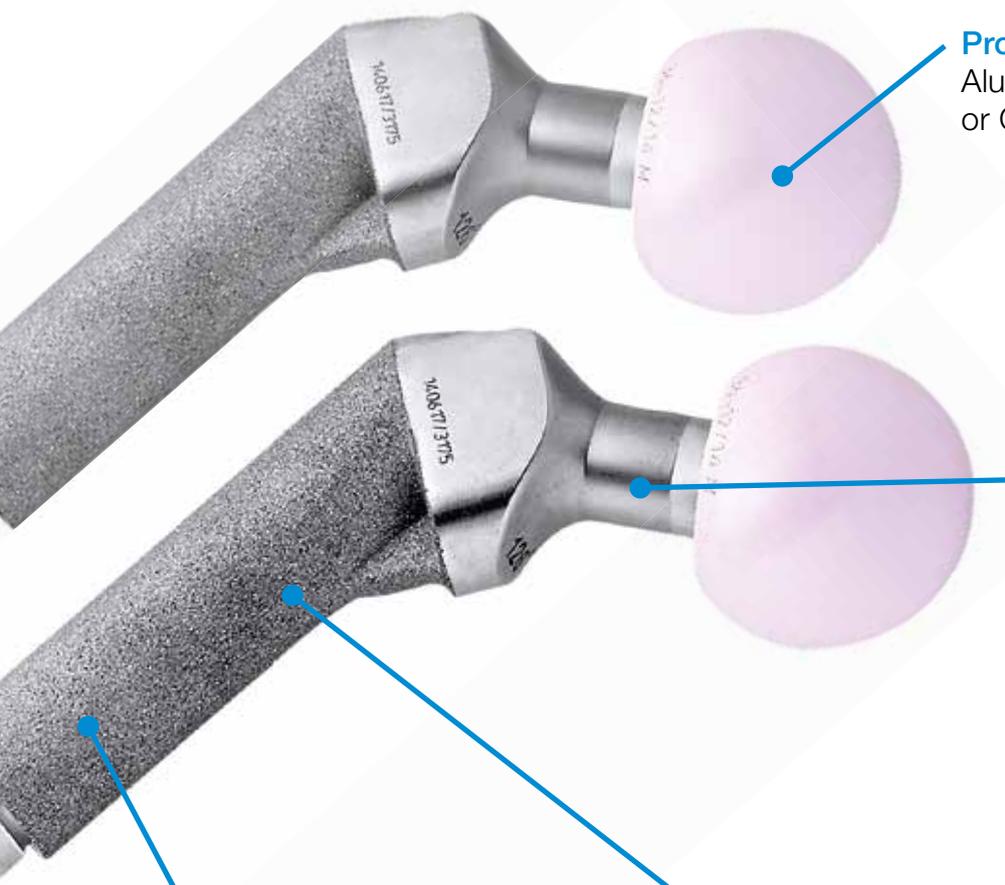
**Cross section**

Longitudinal ribs provides rotational stability



**Cemented**

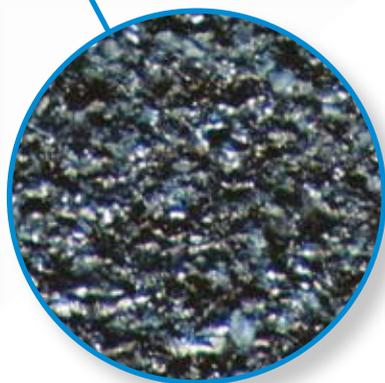
4 lengths, 200mm - 320mm  
3 diameter, 12, 14 & 16mm



**Prosthesis heads**  
Aluminum oxide ceramic  
or CoCrMo alloy



**2 CCD-angle**  
126° and 135°  
**2 Neck lengths**  
Standard and XXL  
**2 different neck segments**  
Standard & proximal replacement with suture holes



**Microporous structure**  
Mean distance of peaks (pore size) 160µm\*\*  
Promotes excellent osseointegration

\*\* Bobyns study revealed an optimal distance of peaks between 50 and 400µm (important for vascularization)



**No Morse taper!**  
Strong, flexible and secure fixation

**LINK MP: All the advantages of a modular stem and the strength of a monolithic stem!**

**Clear Indication**

“To our knowledge, there is no other modular, cementless, distally fixed implant for which in the face of deficient proximal support of the prosthesis is advocated by the manufacturer.”<sup>3</sup>

**Strength**

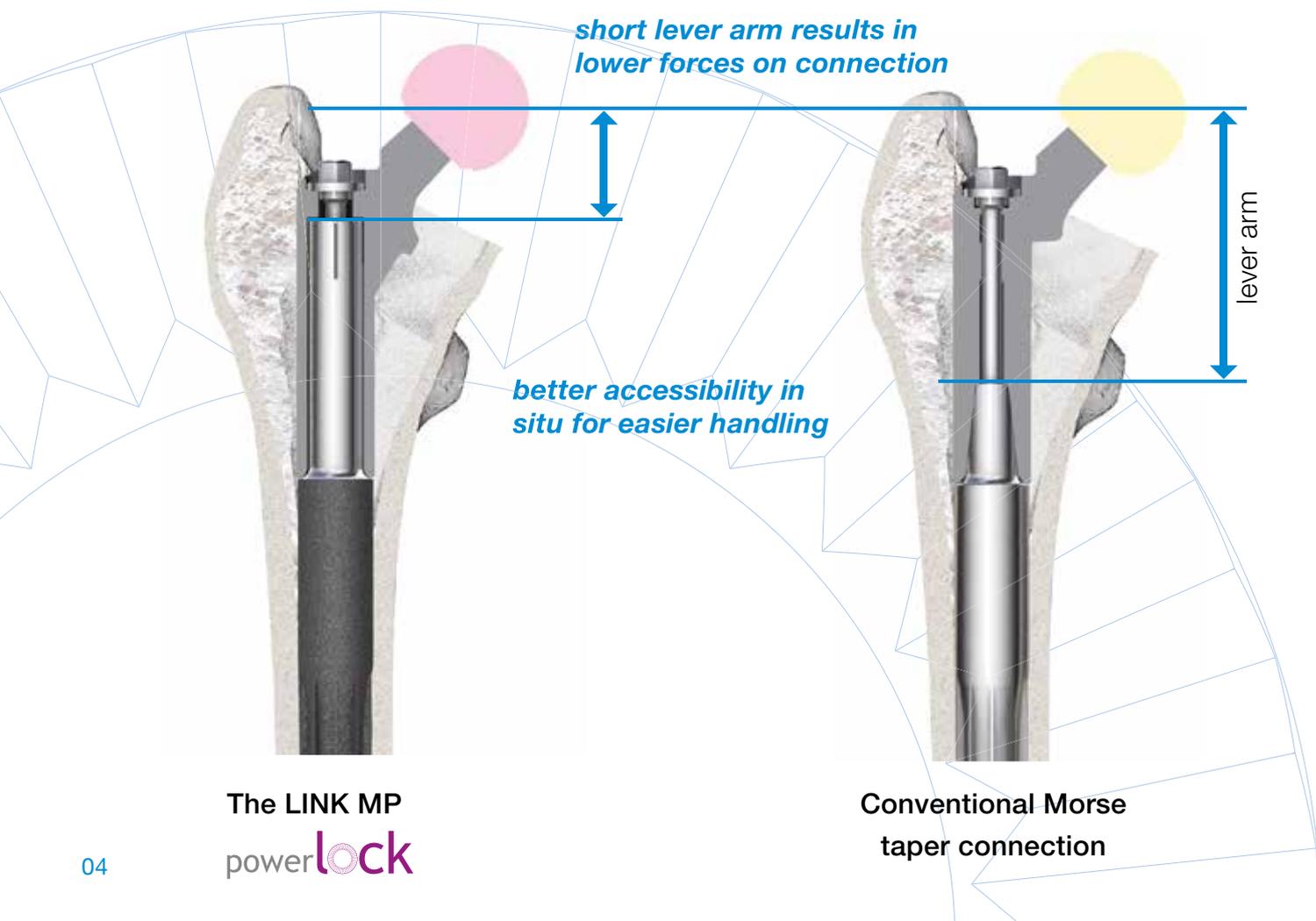
Location of locking mechanism, not a morse taper design “[...] strongly suggest a structural benefit of the extreme length of the distal neck sleeve.”<sup>4</sup>

**Fully Proven**

LINK MP testing data conclusion: “[...] the structural characteristics of the LINK MP Hip Stem are such that it offers the prospect of in vivo longevity.”<sup>4</sup>

**No modular junction failures**

**Proximal junction guarantees a safer connection**



## Expansion Bolts - the better solution

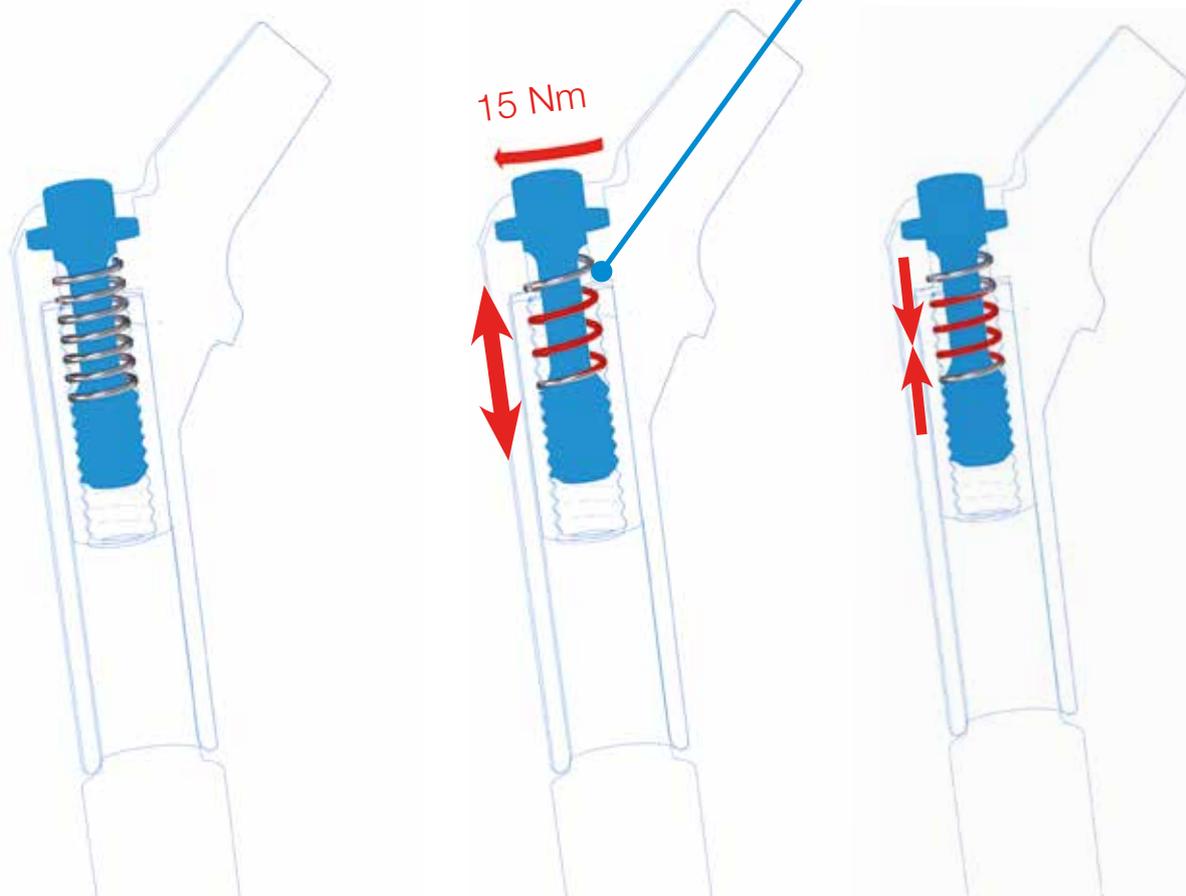
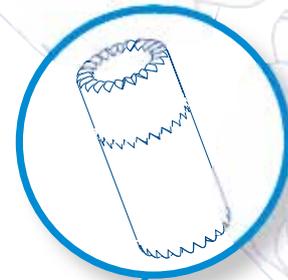
Expansion bolts are commonly used in any heavy duty situation, such as engines and big machines, where dynamic forces and alternating stress occurs.

Due to the geometry in this slim midsection, the expansion bolt is distinctly elastically stretchable (like a spring). When tightened with a defined torque, the expansion screw stretches until the desired retention force is reached. This force contracts and secures the neck segment and stem.

## Why not just a regular screw?

When two pieces are connected with a screw, after a while the material settles. Consecutively a rigid screw would protrude and the retention force automatically decreases. This leads to a loosening of the assembly.

An expansion bolt is elastic in its elongation. It compensates for the settlement of the connected components. As a result, it provides the desired retention force and ensures a durable safe connection.



### Measurements of the LINK MP Reconstruction System



**Total length of Implant = Stem length + Neck height + junction\* (+ Spacer)**

\* Junction is always 5mm.

### Total length of the implant in different combinations

Measured from centre of rotation to tip of the stem by using a ± 0mm head M (with Ø 28 - 40mm)

Stem length	Neck segment (126°)				Neck segment (135°)			
	Head Ø 28 - 40mm							
	Standard		XXL		Standard		XXL	
	35mm	65mm	35mm	65mm	35mm	65mm	35mm	65mm
<b>160mm</b>	187mm		194mm		189mm		200mm	
<b>180mm</b>	207mm		204mm		209mm		220mm	
<b>210mm</b>	237mm		244mm		239mm		250mm	
<b>250mm</b>	277mm		284mm		279mm		290mm	
<b>290mm</b>	317mm		324mm		319mm		330mm	
<b>330mm</b>	357mm		364mm		359mm		370mm	

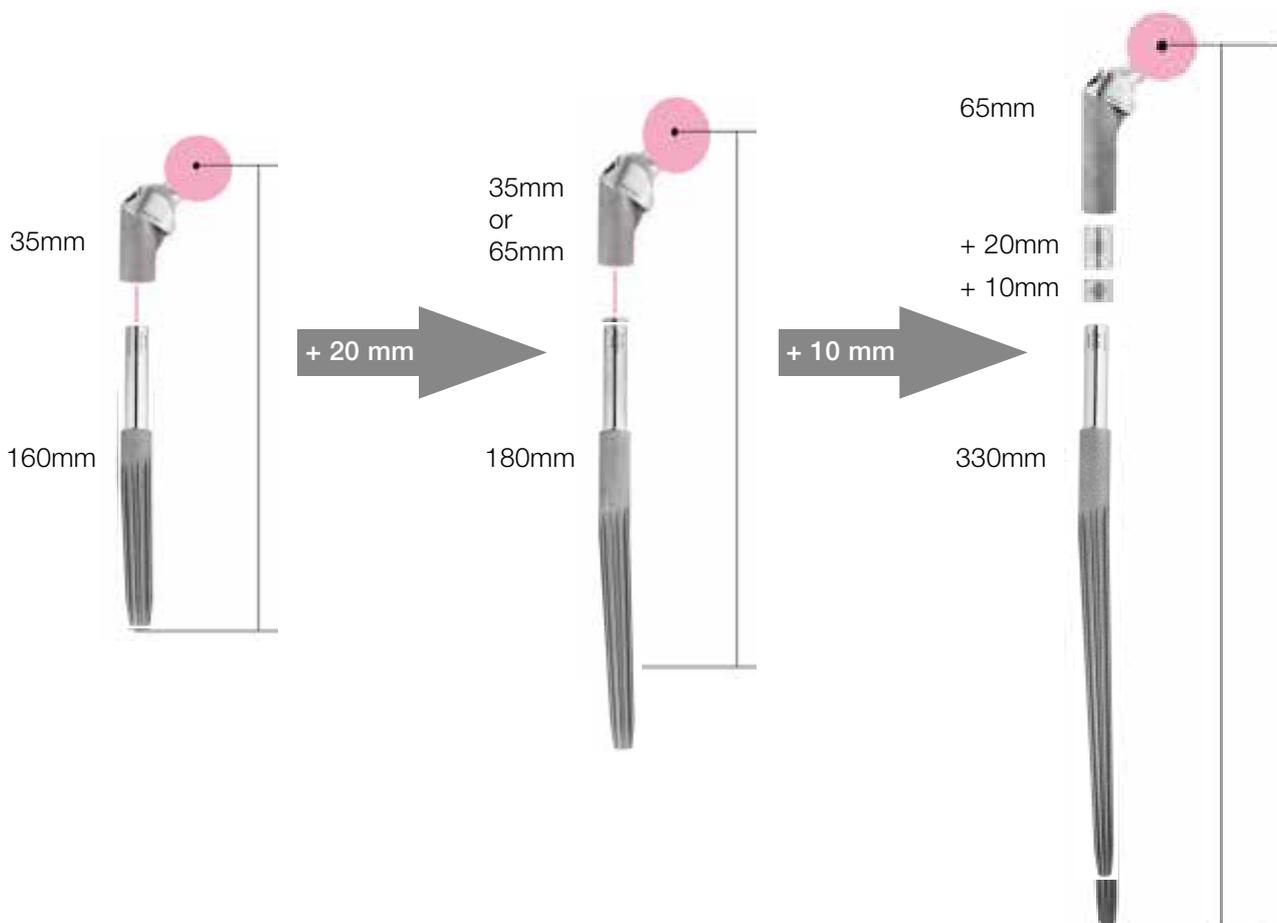
#### Shortest combination

#### Longest combination

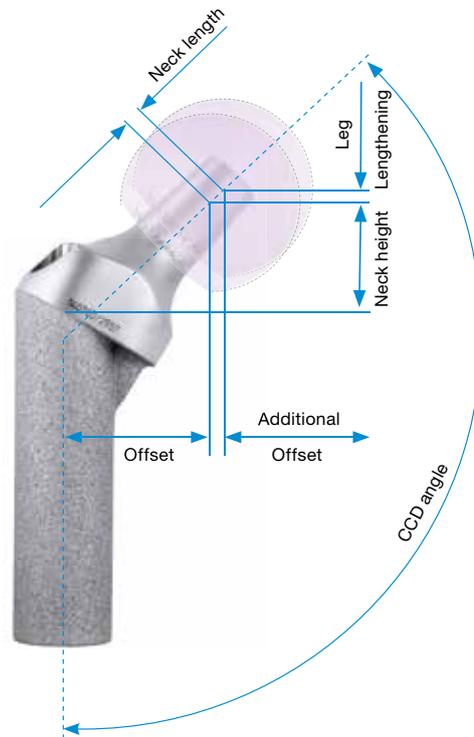
126° CCD

126° CCD

135° CCD



### Offset- and length values using different necksegments and heads

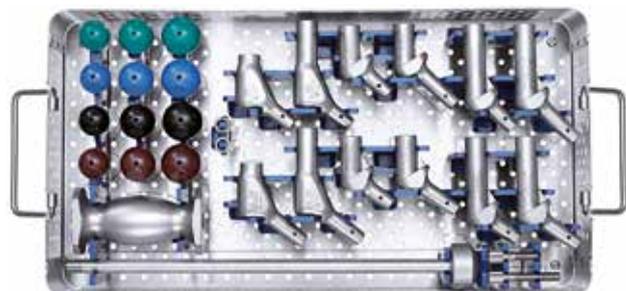
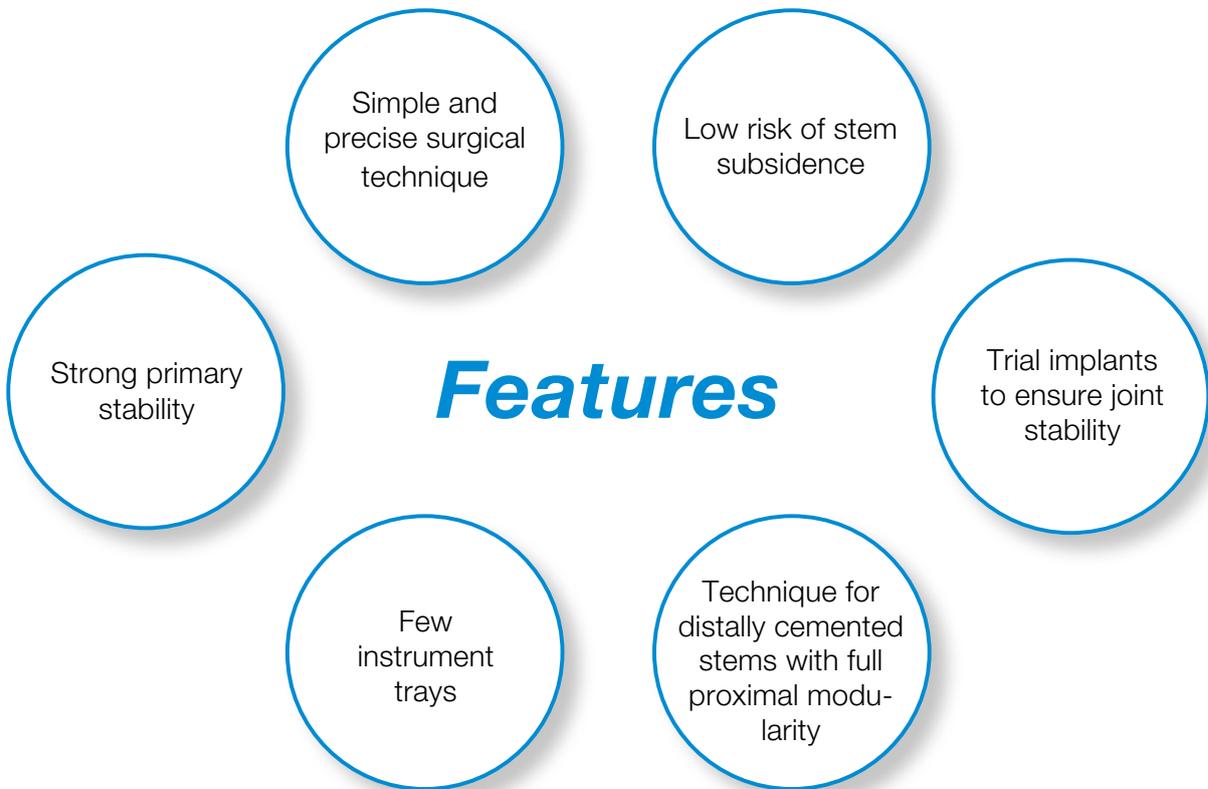


	CCD angle 126°		CCD angle 135°	
	Head Ø 28 - 40mm, size M			
	Standard	XXL	Standard	XXL
Offset	31mm	40mm	29mm	40mm
Neck height	22mm	29mm	24mm	35mm

### Additional offset and leg lengthening by using different prosthesis heads

	CCD angle 126°							
	Head Ø 28mm				Head Ø 32mm - 36mm			
	S	M	L	XL	S	M	L	XL
Additional offset	-3mm	0mm	+3mm	+9mm	-3mm	0mm	+3mm	+7mm
Leg lengthening	-2mm	0mm	+2mm	+6mm	-2mm	0mm	+2mm	+5mm

	CCD angle 135°							
	Head Ø 28mm				Head Ø 32mm - 36mm			
	S	M	L	XL	S	M	L	XL
Additional offset	-3mm	0mm	+3mm	+7mm	-3mm	0mm	+3mm	+6mm
Leg lengthening	-3mm	0mm	+3mm	+7mm	-3mm	0mm	+3mm	+6mm



Summary

1.



Distal reaming

2.



Impaction of the stem

3.



Proximal reaming

4.



Trial reduction

5.



Final assembly

## Quotes

In this study, radiographic evidence of osseointegration (involving the “distal segment” of the implant) was seen in all stems, and there were no cases of progressive subsidence or subsidence beyond 10mm. [...] in conclusion, the “LINK MP stem” achieved reproducible and durable implant fixation, as well as restoration of clinical function in femoral revision with bone-loss.<sup>1</sup>

It is noteworthy that the modular junction of this implant performed well at this length of follow-up with no failures attributable to it. When the modular junctions were examined during the 3 re-revisions performed by us (2 for dislocations and 1 for cup revision), there was no evidence of corrosion or any damage to the modular junction.<sup>1</sup>

In our opinion, the MP reconstruction stem offers a variety of advantages in direct comparison with non-modular revision implants. These include distal fixation without further cementing; adjustment of the femoral neck; variable offset and rotation, and, furthermore, related adjustments of the soft tissue.<sup>2</sup>

At final follow-up, all patients had stable implants and all acute fractures were healed. Marked reconstruction of proximal femoral bone stock was observed consistently. [...] the preliminary result of this method shows a high rate of stable implant fixation and fracture healing with preservation and reconstitution of the host femur.<sup>3</sup>

Revision THA in patients with extensive proximal femoral bone loss using the Link MP fluted, tapered, modular stem led to a high rate of osseointegration of the stem at mid-term follow-up.<sup>4</sup>

<sup>1</sup> Rodriguez et al. – Reproducible fixation with a tapered, fluted, modular, titanium stem in revision hip arthroplasty at 8-15 years follow-up, The Journal of Arthroplasty 29 Suppl. 2 (2014) 214-218

<sup>2</sup> Klauser et al. - Medium-term Follow-Up of a Modular Tapered Noncemented Titanium Stem in Revision Total Hip Arthroplasty, The Journal of Arthroplasty Vol 28 Nr. 1, 2013, 84-89

<sup>3</sup> Berry – Treatment of Vancouver B3 Periprosthetic Femur Fractures With a Fluted Tapered Stem, Clinical Orthopaedics and related research Nummer 417, Seiten 224-231

<sup>4</sup> D. F. Amanatullah et al. – Revision total hip arthroplasty in patients with extensive proximal femoral bone loss using a fluted tapered modular femoral component, The Bone & Joint Journal, Vol. 97-B, No.3, March 2015

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