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
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)

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

No Morse taper!
Strong, flexible and secure fixation

Made in Germany
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.”

**Strength**
Location of locking mechanism, not a morse taper design “[…] strongly suggest a structural benefit of the extreme length of the distal neck sleeve.”

**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.”

**Proximal junction guarantees a safer connection**

- **short lever arm results in lower forces on connection**
- **better accessibility in situ for easier handling**

The LINK MP
powerlock

Conventional Morse taper 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)

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

126° CCD

160mm ± 20mm

**Longest combination**

135° CCD

65mm ± 20mm + 10mm
Offset- and length values using different necksegments and heads

<table>
<thead>
<tr>
<th>CCD angle 126°</th>
<th>CCD angle 135°</th>
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<tbody>
<tr>
<td>Head Ø 28 - 40mm, size M</td>
<td>Head Ø 28mm - 40mm, size M</td>
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<td>Standard</td>
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<td>Offset</td>
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<td>Neck height</td>
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<td>40mm</td>
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<td>29mm</td>
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Additional offset and leg lengthening by using different prosthesis heads

<table>
<thead>
<tr>
<th>CCD angle 126°</th>
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<tr>
<td>Head Ø 28mm</td>
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<td>S</td>
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<tr>
<td>Additional offset</td>
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<tr>
<td>Leg lengthening</td>
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</tbody>
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<table>
<thead>
<tr>
<th>CCD angle 135°</th>
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<tr>
<td>Head Ø 28mm</td>
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<td>S</td>
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<td>Leg lengthening</td>
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</tbody>
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Features

- Simple and precise surgical technique
- Low risk of stem subsidence
- Trial implants to ensure joint stability
- Strong primary stability
- Few instrument trays
- Technique for distally cemented stems with full proximal modularity

Instruments
Summary

1. Distal reaming
2. Impaction of the stem
3. Proximal reaming
4. Trial reduction
5. Final assembly

Surgical Technique
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.¹

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.¹

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.²

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 show a high rate of stable implant fixation and fracture healing with preservation and reconstitution of the host femur.³

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.⁴

¹ Rodríguez 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
² 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
³ Berry –Treatment of Vancouver B3 Periprosthetic Femur Fractures With a Fluted Tapered Stem, Clinical Orthopaedics and related research Nummer 417, Seiten 224-231