Dual Mobility made of Cobalt-chrome alloy

groupe lépine

Depuis 1714
Why dual mobility?

Small head diameter reduces wear – the "LOW FRICTION" principle

Large head diameter provides good joint stability

The combination of these two concepts reduces wear while ensuring good stability with a dual mobility design

Longevity and stability

Two concentric articulations that resist wear and improve stability:

1. The small articulation, more often loaded, preserves the polyethylene
2. The large articulation, loaded at the extremes of ROM, ensures stability
Since the early 1980s, the clinical effectiveness of the dual mobility concept has been proven in terms of:
- better joint stability
- greater range of motion

In primary arthroplasty, as well as in revision or acetabular reconstruction cases, this concept covers a range of homogeneous implants.
**Technical features that meet your needs**

**Pure hemispheric shape:**
- Prevents risk of damaging cam effect between implant neck and cup edge
- Compatible with preferred cup inclination to prevent psoas impingement and risk of posterior dislocation

**Cobalt-chrome metal alloy:**
- Optimal rigidity of the cup
- Hardness reduces risk of scratching
- Sphericity maintained during entire life of implant

**Porous titanium sublayer:**
- Vacuum-plasma sprayed to reduce risk of weakening the implant interface
- Surface roughness essential to obtain the "anchoring volume"
  - Primary implant fixation
  - Secondary fixation through binding of newly formed bone into the pores of the coating
- Porous titanium
- Hydroxyapatite
- x200 magnification (binocular microscope)

**Homogeneous layer of hydroxyapatite:**
- High purity (> 95%) needed for biological fixation of the impacted cup

**Retention of the implant head:**
- Head passes through a restriction that is smaller than its diameter
- Optimal height of polyethylene insert which does not compromise strength at the material’s elastic limit and avoids any plastic deformation

**Modeling of polyethylene stresses and deformation during passage of the head:**
- A long descending insert: eliminates risk of altering diameter at restriction point
- B shortened insert: excessive stresses cause irreversible deformation of restriction point

**Insert with large descending coverage:**
- Long beveled edge (1)
  - To protect neck and preserve 3rd articulation (between insert and neck)
- Second protective beveled edge (2)
  - To prevent impingement between Morse taper and retaining rim
Preventing instability

The implant geometry, macrostructure and surface finish were developed so that optimal primary stability could be achieved without relying on the fixation screw.

- **4 tropical spikes** to prevent implant from tipping
- **Flattened polar end cap** to avoid bottoming out of cup and encourage equatorial press-fit
- **6 fins around the equator** to provide rotational stability
- **Bilayer coating** consisting of vacuum-plasma sprayed (VPS) porous titanium underlayer and hydroxyapatite layer
- **Spherical shape** with indentation for improved clearance

Test report: Tipping resistance test for various cup configurations (data from manufacturer)

*Refer to complete product reference number list*
Optimizing reconstruction

The Marc. K acetabular cross plate is a metal reinforcement guide used during acetabular reconstruction.

In this indication, the benefits of dual mobility cups are indisputable because of:
- reduced stress
- good stability

Marc. K acetabular cross plate
Sizes 4 to 6, left and right*

CEM Quattro cup
Sizes 44 to 56*

Dual mobility insert
Sizes 44 to 56, Ø 22.2 and 28 mm*

Correspondence Marc. K cross plate with CEM Quattro cup

<table>
<thead>
<tr>
<th>Size Marc. K cross plate</th>
<th>Quattro Ø 22 mm</th>
<th>Quattro Ø 28 mm</th>
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<tbody>
<tr>
<td>4</td>
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</table>

*Refer to complete product reference number list
Dual mobility is an effective technical approach to meet all the requirements of orthopedic surgeons who want to ensure that the joint is stable, leg length is equal and muscle tension is restored.

GROUPE LEPINE is committed to making all of these needs co-exist with optimal and safe use of these implants, based on its manufacturing know-how (1-3), which takes into account a unique mechanical environment, as well as a sound published clinical follow-up (4-9).
Range of Quattro Cobalt-chrome cups

**HAP Quattro VPS cup**

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<thead>
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**HAP Quattro cup Press Fit**

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**CEM Quattro cup**

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**Dual-mobility liner**

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**Correspondence Marc. K acetabular cross and CEM Quattro cup**

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<th>Size acetalobular cross Marc.K</th>
<th>Quattro VPS Ø 22.2 mm</th>
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**Marc. K acetab cross**

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**Cortical bone screw Ø 5 mm**

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HAP and CEM Quattro Cobalt-chrome cups

Vacuum pump holder, Quattro VPS
Ref. HQA VI003

Vacuum pump positionner
Ref. HQA VI004

M10 impactor
Ref. HQA VI002

Liner impactor
Ref. HQA VI011

M10 Impaction end
Ref. HMA TA009

Pump piston joint
Ref. HQAS011

M10 head impaction tip
Ref. HMA TA008

Pump end joint
Ref. HQAS009

Pump plate joint
Size Ref.
44 HQAJS028
46 HQAJS032
50/52 HQAJS036
54/56 HQAJS040
58/60 HQAJS044

Quattro VPS pump plate
Size Ref.
44 HQA VI044
46 HQA VI048
48 HQA VI050
50 HQA VI052
52 HQA VI054
54 HQA VI056
56 HQA VI058
58 HQA VI060

M10 trial cup
Size Ref.
44 HL3010-144
46 HL3010-148
48 HL3010-150
50 HL3010-152
52 HL3010-154
54 HL3010-156
56 HL3010-158
58 HL3010-160

Dual-mob trial liner
Size Diameter Ref.
44 22.2 HQA VN244
46 22.2 HQA VN246
48 22.2 HQA VN248
50 22.2 HQA VN250
52 22.2 HQA VN252
54 22.2 HQA VN254
56 22.2 HQA VN256
58 22.2 HQA VN258
60 22.2 HQA VN260
48 28 HQA VN848
50 28 HQA VN850
52 28 HQA VN852
54 28 HQA VN854
56 28 HQA VN856
58 28 HQA VN858
60 28 HQA VN860

Liner impactor end
Ref. HQA VI013

Monobloc stem fork
Ref. HQA VI010

Quattro VPS cup rack N1
Ref. HQA VP003

Quattro VPS cup rack N2
Ref. HQA VP005

Marc. K acetabular cross plate

Marc. K. trial cross
Size Side Ref.
4 right SA0201064
5 right SA0201065
6 right SA0201066
4 left SA0201074
5 left SA0201075
6 left SA0201076

Marc. K. acetabular cross holder
Ref. HKA PA001

T handle screwdriver HEX 3.5
Ref. SA0360007

Drill Ø 3.2 L 200
Ref. GUA FX050

Depth gauge
Ref. HL3010-200-07

A01 Bowl
Ref. UCAEC004

A02 Bowl
Ref. UCAEC003

A01 small holes bowl
Ref. UCAEC008

N2 mini bowl
Ref. UCAEC010

Universal rack H75
Ref. UCAPA001

Universal cover 534 X 249
Ref. UCAC0001

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