Constrained liner options to meet the most demanding needs

- Freedom® Standard Face
- Freedom® 10 Degree
- Freedom® +1mm Standard Face
- Freedom® -1mm Standard Face
- Freedom® All-poly

See next page for detailed information.

References

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Freedom® Constrained Liner

Knees • Hips • Extremities • Cement and Accessories • PMI • Technology
**Freedom® Constrained Liner**

**Maximum resistance to dislocation**

The use of constrained liners in patients of joint instability has historically been a trade off of constraint to range of motion. The Freedom® Constrained Liner offers a high level of constraint while maintaining optimal range of motion. The Freedom® system has performed well resisting dislocation in the early term when patients are most prone.¹

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**Un-lock/Re-lock Mechanism**

Allows for easy disassembly without damaging the liner.²

**Maximum Range of Motion:** 114 Degrees

**Average Lever-out Force:** 190 lbs.

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**Pre-assembled Metal Constraining Ring**

Allows the surgeon to easily assemble the head and liner in situ and maximize the lever out force of the head.

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**Initial Push-out**

<table>
<thead>
<tr>
<th>System</th>
<th>Push-out (lbf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zimmer Trilogy®</td>
<td>722</td>
</tr>
<tr>
<td>Biomet RingLoc®</td>
<td>660</td>
</tr>
<tr>
<td>DePuy Duraloc®</td>
<td>663</td>
</tr>
<tr>
<td>Smith &amp; Nephew Reflection®</td>
<td>65</td>
</tr>
</tbody>
</table>

**Initial Lever-out**

<table>
<thead>
<tr>
<th>System</th>
<th>Lever-out (lbf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zimmer Trilogy®</td>
<td>408</td>
</tr>
<tr>
<td>Biomet RingLoc®</td>
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</tr>
<tr>
<td>DePuy Duraloc®</td>
<td>647</td>
</tr>
<tr>
<td>Smith &amp; Nephew Reflection®</td>
<td>92</td>
</tr>
</tbody>
</table>

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**RingLoc® liner technology: Proven after 15 years of clinical use**

Various forces including toggling, levering and rotation are present during normal acetabular kinematics. To extend acetabular component life and help reduce potential debris generation, the shell-to-liner locking mechanism must be sound. Independent labs have consistently rated Biomet’s RingLoc® cups among the best.²⁻⁴⁻⁵

- Proven to be a superior locking mechanism for polyethylene liners²⁻⁴⁻⁵
- High strength of the locking mechanism helps prevent liner disassociation from the shell
- Fully supported liner for even stress distribution
- Lowest micromotion of all tested systems to help eliminate debris generation²
- Combine with Biomet’s Freedom® Constrained Liner for patients at high dislocation risk

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¹ Not all the time is removed. It is recommended that the locking ring be removed and replaced with a new one.
² The test is designed to any way, in order to determine all effects.
³ The tests are the property of the Orthopaedic Research Laboratory of the Mt. Sinai Medical Center, Cleveland, Ohio. The figures and distribution of the samples are shown.