With the introduction of Microplasty and Premier Instrumentation platforms and advancements such as our patented Slidex Technology, the Vanguard Complete Knee System is the surgeon’s ally in exceeding the demands of today’s active joint replacement patient.
References


Vanguard Monobloc
System Overview
Taking advantage of a successful clinical heritage

Introduction

Together with Dr. Merrill Ritter, Biomet introduced the AGC in 1983. The AGC continues to be implanted today with a clinical survivorship at twenty years of 97.8% \(^1\). Dr. Ritter has in part attributed this success both to the Monobloc tibial design and the manufacturing process of Biomet’s polyethylene – ArCom\(^a\).

Building upon this success, Biomet launched the Vanguard complete knee system in 2003. The aim was to provide the single most comprehensive integrated knee system to date. Naturally this system includes the Monobloc tibia, a design which has demonstrated its ability to significantly reduce micromotion, and the potential for particle generation between the tibial insert and the metal base plate in comparison to modular total knee replacements \(^1,3\).

Design Advantages

- Successful long term clinical history with the AGC - 97.8% at 20 years \(^1\).
- The Monobloc design provides resistance against micromotion between the tray and the polyethylene \(^3\).
- Clinically proven direct compression moulded polyethylene \(^1,2,4,5,7\).

ArCom\(^a\) Timeline

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<th>Year</th>
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<tr>
<td>1992</td>
<td>Argon packaging for gamma irradiated sterilisation introduced.</td>
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<td>1993</td>
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Tibial Design Features

- 7 sizes of tray from 63mm to 83mm
- Patella tendon relief facilitates increased range of motion
- Tibial stem available in both I-Beam and Finned variants
- Prominent anterior lip provides rotational stability and controls anterior femoral slide
- Full interchangeability of femoral and tibial component allows optimal independent component sizing

1995
Non-stearated resin becomes the standard for all Biomet polyethylene.

1998
Dr. Ian Clarke publishes simulator data showing a 32% reduction in wear with isostatic moulded polyethylene.

2001
Dr. M Ritter publishes 15 year results with the AGC showing survivorship at 98.9%, no polyethylene related failures.
The Monobloc tibia, as found in the AGC Total Knee System, has demonstrated excellent clinical and radiological results, with less wear and increased resistance to micromotion.\textsuperscript{1-3}

- The Monobloc design clinically reduces micromotion and the potential for particle generation.\textsuperscript{1,2,4,9}

- The direct compression moulding process produces a mechanical bond between polyethylene and the cobalt chrome baseplate.\textsuperscript{1,2,4,9}

- Moulded articular geometry eliminates machine lines on the polyethylene articular surface and the potential for debris generation caused by machine line cold flow.

Proven Clinical Heritage\textsuperscript{1,2}

2003

Building upon clinical heritage, Vanguard is launched with Direct Compression Moulded Polyethylene.

2008

Between 1983-2004, 7,760 AGC total knee replacements were implanted. The 20 year survivorship was 97.8\%.\textsuperscript{1}