DESIGN RATIONALE

SHOULDER ARTHROPLASTY SYSTEM

COMBINING SCIENCE, SIMPLICITY AND CLINICAL SUCCESS
Successful total shoulder arthroplasty requires extensive surgical exposure, simple instrumentation, a firmly seated glenoid prosthesis and an anatomic articulating surface.

**Glenoid Fixation**
Easier and more effective

**Surgical Exposure**
DePuy is committed to surgeon education through a number of learning and visitation centres, led by key surgeons throughout the calendar year.

**Firmly Locked Glenoid**
Patented anchor peg glenoid design provides greater stability by preventing ‘rocking horse’ related loosening.

Keeled glenoids are available for cases involving a tight joint compartment or compromised glenoid bone stock. The Anchor Peg glenoid is now available in a cross-linked polyethylene material called 1020 XLK, which increases its wear properties by 85%. In the latter half of 2006, the new 1020 XLK UHMWPE Keeled glenoid will launch Internationally to complement our existing glenoid portfolio.

**Anatomical Articulating Surface**
A constant 6 mm diametral mismatch between the glenoid and the humeral head emulates anatomic biomechanics and helps reduce potential rim loading.

**Anchor Peg**
Part of the current global portfolio

The DePuy glenoid portfolio consists of the Anchor Peg and Keeled options, both in Enduron and Cross Linked material. They are all manufactured to function with the Global Shoulder system. There is a cross linked glenoid option for every Global Advantage head size. Since the normal shoulder joint allows for translation of the head, each of the DePuy glenoid products has been designed with a 6mm larger diametric curvature than the conforming humeral head component, thus facilitating anatomical motion.

The Global Advantage shoulder brings together a pressfit proximal humeral body and low profile standard and eccentric humeral head options with easy to use and intuitive instrumentation.
DePuy has combined new science and simple instrumentation with the Global™ Shoulder’s decade of clinical success to bring you the Global Advantage® Shoulder Arthroplasty System. The Global Advantage Shoulder is the only third generation system that brings together a proximal-filling humeral body and low profile standard and eccentric humeral head options with easy to use instruments.

**NEW FEATURES**

**Recessed collar**
- Helps optimize glenohumeral contact area

**Low profile standard and eccentric humeral heads**
- Increase articular surface area by 25-33 percent

**Reduced lateral fin prominence**

**Medial fin hole**
- Provides additional fixation opportunities if used for fractures

**PROVEN FEATURES**

**Proximal-filling body**
- Proven success in press-fit application

**Reverse Morse taper locking mechanism**
- Provides maximum surgical exposure with stem and broach
- Allows humeral head removal without removing stem

**Pegged and keeled glenoids**
- Anatomic mismatch allows natural translation
- Gas plasma sterilization helps reduce oxidative potential

**Anchor Peg glenoid (Enduron & 1020 XLK)**
- Immediate and ongoing stability for secure fixation via the central fluted and peripheral support pegs
- 1020 XLK delivers significantly reduced long-term wear benefits for durability of the prosthesis
IMPROVED INSTRUMENTATION
Simple and more efficient

GLENOID REAMERS
- More efficient glenoid reaming
- Improved visualization

HUMERAL HEAD IMPACTION STAND
Helps ensure head impaction is in line with taper
Measures position of eccentric head

BROACH IMPACTION HANDLE
More efficient cutting broaches
Streamlined impaction handle does not interfere with soft tissue and bony structures

INTRAMEDULLARY CUTTING GUIDE
Helps provide reproducible humeral head resection
STEM FIXATION
Proven press-fit success

The Global Advantage Shoulder features a clinically proven press-fit stem design. Unlike some stems that were originally designed to rely on cement, the Global Advantage humeral stem relies on the same anatomic, proximal-filling design as the original Global Shoulder.

Improved head position and biomechanics were derived from a comparative study of anthropometric data and cadaveric evaluation.¹

“The uncemented medullary canal-fitting humeral prosthesis demonstrated no radiographic evidence of humeral stem loosening with 2 - 7 year follow-up.”²

<table>
<thead>
<tr>
<th>DIAMETER (mm)</th>
<th>STD. LENGTH (mm)</th>
<th>REV. LENGTH (mm)</th>
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<td>8</td>
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<tr>
<td>16</td>
<td>160</td>
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</table>
HUMERAL HEAD OPTIONS

Anatomic head replacement

HUMERAL HEAD OPTIONS

- Head size options
- Head standard head eccentric head
- Diameter height options (mm) (mm) (mm)
- 40 15, 18, 21
- 44 15, 18, 21 18, 21
- 48 15, 18, 21 18, 21
- 52 15, 18, 21 18, 21
- 56 15, 18, 21

HUMERAL HEAD RADIUS OF CURVATURE

- Radius of curvature ranges from 19-28mm (38-56mm diameter).
- Five diameters are available to recreate anatomical curvature:

  - 40mm
  - 44mm
  - 48mm
  - 52mm
  - 56mm

HEAD HEIGHT

While there is a correlation between head height (thickness) and humeral head radius of curvature, variations persist. In fact, a study of 96 shoulder arthroplasty cases revealed that within a given radius of curvature a number of different thicknesses exist.

In order to replicate natural anatomy, the Global Advantage System provides three standard head height options for each head diameter:

  - 15mm
  - 18mm
  - 21mm

HEAD SIZE OPTIONS

<table>
<thead>
<tr>
<th>HEAD DIAMETER (mm)</th>
<th>STANDARD HEAD HEIGHT OPTIONS (mm)</th>
<th>ECCENTRIC HEAD HEIGHT OPTIONS (mm)</th>
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<tbody>
<tr>
<td>40</td>
<td>15, 18, 21</td>
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<td>44</td>
<td>15, 18, 21</td>
<td>18, 21</td>
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<td>48</td>
<td>15, 18, 21</td>
<td>18, 21</td>
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<td>52</td>
<td>15, 18, 21</td>
<td>18, 21</td>
</tr>
<tr>
<td>56</td>
<td>15, 18, 21</td>
<td>18, 21</td>
</tr>
</tbody>
</table>

STANDARD AND ECCENTRIC HEAD CAPABILITY

- Eccentric heads are not mandatory, but are an option.
- Infinitely dialable heads are not limited to preset positions.
- Standard heads have three height options.
- Eccentric heads have two height options.
### Standard Humeral Stems

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Diameter</th>
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<tbody>
<tr>
<td>1137-06-000</td>
<td>6 mm</td>
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<tr>
<td>1137-08-000</td>
<td>8 mm</td>
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<tr>
<td>1137-10-000</td>
<td>10 mm</td>
</tr>
<tr>
<td>1137-12-000</td>
<td>12 mm</td>
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<tr>
<td>1137-14-000</td>
<td>14 mm</td>
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<tr>
<td>1137-16-000</td>
<td>16 mm</td>
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### Standard Humeral Heads

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Diameter</th>
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<tbody>
<tr>
<td>1128-40-000</td>
<td>40 x 15mm</td>
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<tr>
<td>1128-40-010</td>
<td>40 x 18mm</td>
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<tr>
<td>1128-40-020</td>
<td>40 x 21mm</td>
</tr>
<tr>
<td>1128-44-000</td>
<td>44 x 15mm</td>
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<tr>
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<td>44 x 18mm</td>
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<tr>
<td>1128-44-020</td>
<td>44 x 21mm</td>
</tr>
<tr>
<td>1128-48-000</td>
<td>48 x 15mm</td>
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<tr>
<td>1128-48-010</td>
<td>48 x 18mm</td>
</tr>
<tr>
<td>1128-48-020</td>
<td>48 x 21mm</td>
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### Revision Humeral Stems

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Length</th>
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<tbody>
<tr>
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<td>8 x 200mm Long</td>
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<tr>
<td>1137-10-010</td>
<td>10 x 210mm Long</td>
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<tr>
<td>1137-12-010</td>
<td>12 x 220mm Long</td>
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<tr>
<td>1137-14-010</td>
<td>14 x 220mm Long</td>
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### Eccentric Humeral Heads

<table>
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<th>Diameter</th>
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<tbody>
<tr>
<td>1128-44-110</td>
<td>44 x 18mm</td>
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<tr>
<td>1128-44-120</td>
<td>44 x 21mm</td>
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<tr>
<td>1128-48-110</td>
<td>48 x 18mm</td>
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<tr>
<td>1128-48-120</td>
<td>48 x 21mm</td>
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<tr>
<td>1128-52-110</td>
<td>52 x 18mm</td>
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<tr>
<td>1128-52-120</td>
<td>52 x 21mm</td>
</tr>
<tr>
<td>1128-56-110</td>
<td>56 x 18mm</td>
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<tr>
<td>1128-56-120</td>
<td>56 x 21mm</td>
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### Pegged Glenoids

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Diameter</th>
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<tbody>
<tr>
<td>1137-84-025</td>
<td>40mm</td>
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<tr>
<td>1137-85-025</td>
<td>44mm</td>
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<tr>
<td>1137-86-025</td>
<td>48mm</td>
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<tr>
<td>1137-87-025</td>
<td>52mm</td>
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<td>1137-88-025</td>
<td>56mm</td>
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<tr>
<td>1137-89-025</td>
<td>56mm XL</td>
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### Keeled Glenoids

<table>
<thead>
<tr>
<th>Part Number</th>
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<tbody>
<tr>
<td>1137-93-025</td>
<td>40mm XS</td>
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<tr>
<td>1137-94-025</td>
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<td>1137-96-025</td>
<td>48mm</td>
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<tr>
<td>1137-97-025</td>
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<tr>
<td>1137-98-025</td>
<td>56mm</td>
</tr>
<tr>
<td>1137-99-025</td>
<td>56mm XL</td>
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</tbody>
</table>

*All glenoids are made from medical grade UHMWPE and gas plasma sterilized to help reduce oxidative potential.*
**GLOBAL ADVANTAGE**

Anatomic Shoulder Arthroplasty

References

1. Data on file at DePuy Orthopaedics, Inc.

The Global Shoulder glenoid components are intended for cemented use only.

This publication is not intended for distribution in the USA.

For more information about the Global Advantage Shoulder, visit our web site at [www.jnjgateway.com/globaladvantage](http://www.jnjgateway.com/globaladvantage).

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