

**The information contained in this document  
is intended for healthcare professionals only.**

# GMRS™

## Global Modular Replacement System

One System, One Vision  
Made for life



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**Restoring Wholeness for Life**

The GMRS™ (Global Modular Replacement) System is the next generation in modular replacement systems. Based on over 25 years of clinical experience between the Kinematic® Rotating Hinge (KRH), Modular Rotating Hinge (MRH) and the MRS™ (Modular Replacement System), the GMRS™ System is an all-in-one solution that is designed to retain the quality and spirit of life for patients who require radical bone resection. The GMRS™ System is indicated for:

- Orthopaedic Oncology
- Revision Surgery
- Trauma

**GMRS™ – Using clinical history to drive technology for patient satisfaction.**

- **Clinical History**  
Based on the principles of the KRH, MRH and MRS™ systems, with over 25 years of established performance.
- **Technology**  
Adhering to the principles of Responsible Science™, while using the highest quality materials available, GMRS™ implants are designed for both the physical and emotional needs of the patient.
- **Patient Satisfaction**  
Meets all of your clinical requirements so you can fulfill the long-term needs of your patients.



**Distal Femur**



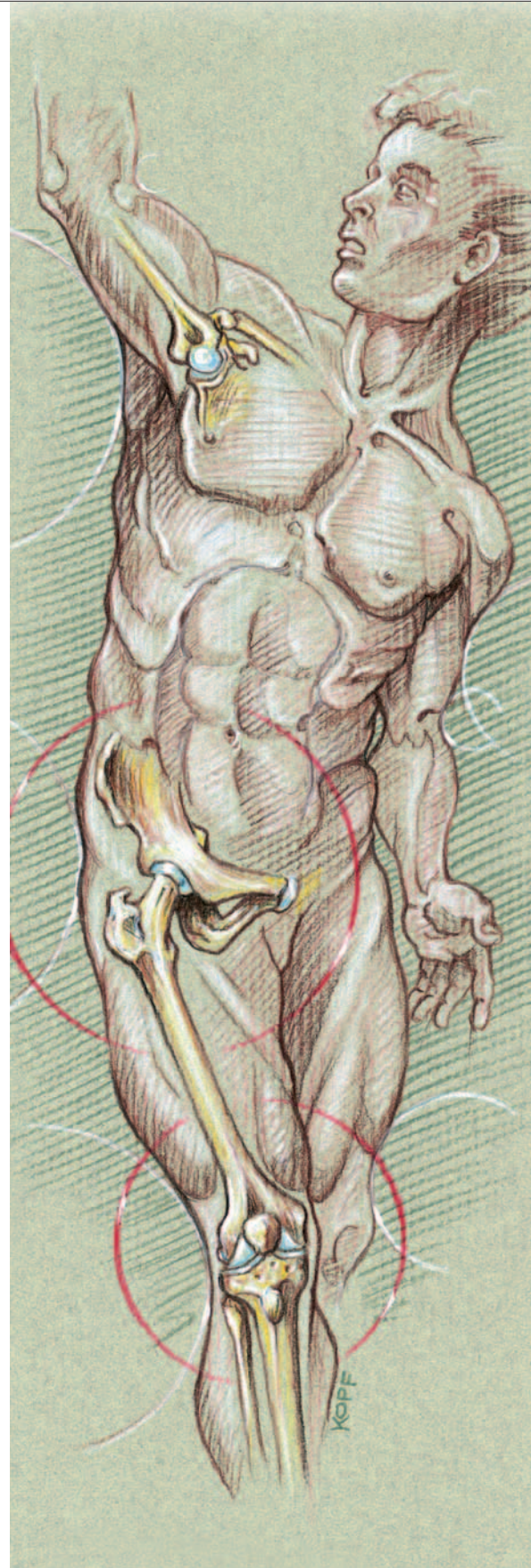
**Proximal Femur**



**Proximal Tibia**



**Total Femur**



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**Clinical History is Knowledge for life**

Stryker Orthopaedics introduced its first rotating hinge components in 1979, setting the stage for an astounding record of over a quarter century of validated clinical success. Throughout these years, Stryker Orthopaedics has accumulated a profound understanding of the clinical needs of surgeons, as well as the ever-changing lifestyle need of the patients that are treated. This knowledge has served as the foundation for the GMRS™ System, which is not only designed to restore your patient's quality of life – but may also enhance it.



- **Validated performance**  
Based not on theory, but upon the thousand of patients who are enjoying more active lives.
- **Validated longevity**  
For over two decades, our segmental systems have been sustaining the restoration of patients' lives.
- **Validated experience**  
Over 20 years of clinical experience in segmental implant design and technology has been put into every GMRS™ product.

## Withstands the test of time

The **GMRSTM** System is the evolution of its predecessors, the **KRH**, **MRH** and **MRSSTM** systems.

**1979**

Original Kinematic® Rotating Hinge is made available to patients.



**1982**

Original Kinematic® Rotating Hinge Segmental Custom Replacement Prosthesis is made available to patients.



**1984-1988**

Modular Prostheses become readily available to patients on a custom basis.



**1988-1996**

MRSSTM System is available to patients via prescription only.



**1996**

MRSSTM System receives FDA 510(k) clearance for sale in the United States.



**2001**

MRH System launched worldwide.



**2003**

**GMRSTM** components offered to patients worldwide.

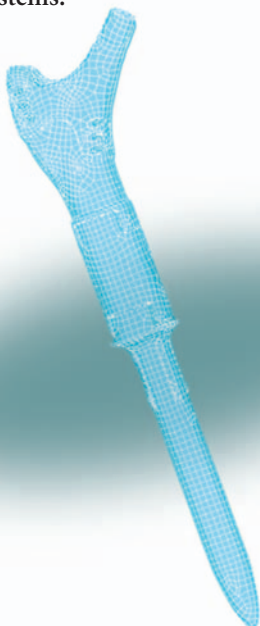


**Technology That's Designed for life**

While clinical history is the foundation for the GMRS™ System, our state-of-the-art technology drives the system's outstanding performance. The GMRS™ System balances the growing demand for high-performance implants with the growing needs of the patients who live with these implants day-by-day and year-by-year.

**One system - multiple technologies**

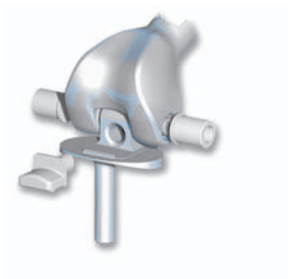
- Articular segments composed of cobalt chrome (CoCr) alloy.
- Extension pieces made of titanium alloy and CoCr are strong, yet lightweight.
- Cemented stems of forged CoCr alloy for added strength.
- Compatible with components of the Modular Rotating Hinge for superior flexibility.
- Implant components are impacted together to produce a strong taper lock.
- Designed to reduce the potential for cold-welding at the taper junction of titanium alloy segments, and titanium press-fit stems.



**Distal Femur**

Distal Femur with All-Poly Tibial Component

All-Poly Tibial Component  
5 sizes, 4 thicknesses



Distal Femoral Component w/accessories  
2 sizes: small\* and standard\*\*

\* Utilizes GMRS™ small axle, small bushings and MRH bumper

\*\* Utilizes Modular Rotating Hinge axle, bushings, and bumper

**Modular Rotating Hinge (MRH)**



MRH Femur  
5 Femoral Component sizes: (XS, S, M, L, XL)

Tibial Insert  
5 Insert thicknesses: (10, 13, 16, 20, 24mm)

Tibial Baseplate  
4 Tibial Baseplate sizes: (S1, S2, M2, L2)

Fluted Stem Extender

**Press Fit Stem Options**



Cemented Stems with and without porous coated body section, available in 8, 9, 10, 11, 13, 15, and 17mm dia. Straight and Bowed



Press-Fit Stems† with titanium plasma spray and PureFix™ HA coating 11-19mm dia. (1mm increments)

† Available for use in proximal femur

**Straight Fluted**

**Bowed**

**Long Bowed**

**Total Femur**



Connection Piece for Total Femur 80mm, 90mm left and right

Distal Femoral Component\*,\*\*

**Proximal Tibia**

Modular Rotating Hinge (MRH) Femur with GMRS™ Proximal Tibia



2 sizes: small and standard

Extension Piece

Cemented Stem with porous coated body section

**Proximal Femur**

V40™ Femoral Heads

Proximal Femoral Segments (standard and trochanteric)

Extension Piece: 30-80mm (10mm increments) 100-220mm (20mm increments)





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**Made for Life**

The creation of the Modular Replacement System, which has evolved to become the Global Modular Replacement System, has allowed patients of all ages to embrace and recapture the lives that they have, after their surgery.

Subsequently, throughout the extensive history of Stryker Orthopaedics segmental implants, an overriding theme of intense customer loyalty resonates in the words, thoughts and feelings of the patients that are treated each and every day, along with the surgeons who helped them to regain their lives.

From active grandmothers working, volunteering and playing with their grandchildren, to young teenagers, who now can walk normally through their schools and interact with their classmates, the Modular Replacement and Global Modular Replacement Systems have consistently given these patients a normal, active life.



“ We’ve provided more orthopaedic oncology solutions than all other companies combined ... where issues are not just quality of life issues, but life itself. ”



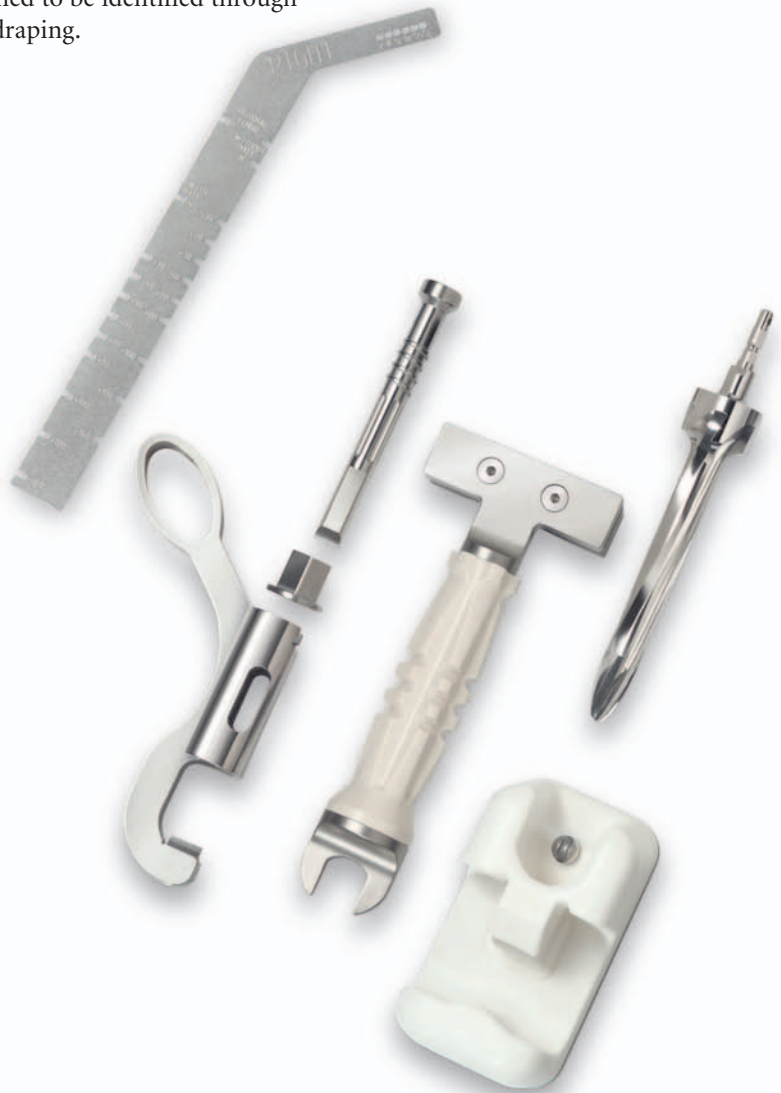
**Instrumentation That Helps You Rebuild Lives**

To ensure the life of the implant and the comfort of the patient, GMRS™ instrumentation is designed for the utmost surgical accuracy and ease of implantation. Among the components offered are:

- Measuring instruments that aid in determining the resection level, for exact reconstruction with corresponding implant lengths.
- Easy-to-use cutting devices such as the Monogram® Knee Instruments, which are designed to ensure accuracy.
- Stem/seat reamers to plane the osteotomy site to ensure accurate seating of the prosthesis on the cortices.
- Complete sets of trial components to verify accuracy after resection.
- Impaction instruments to securely lock all modular components.

**Easy, efficient access**

GMRS™ storage and sterilization cases are designed for simplicity, with the entire O.R. staff in mind. GMRS™ cases and trays are sequentially organized and color-coded to optimize O.R. efficiency. Clearly labeled trial components help surgical teams select instruments quickly and accurately, while instrument cases are designed to be identified through surgical draping.



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## **Styker Orthopaedics** **Your Resource for Life**

With the introduction of its first segmental implant system in the 1980s, Stryker Orthopaedics pioneered the development and future of reconstructive orthopaedic devices. Drawing upon its worldwide resources, Stryker Orthopaedics is now the global leader with products and services marketed in more than 40 countries worldwide.

- A caring company that supports all aspects of the clinical experience for the patient, surgeon and hospital staff.
- Totally committed to the research, development and manufacturing of new technologies and products to improve the lives of patients.
- The world's largest orthopaedic sales force that is always ready to address your needs.



### **The System** **That's Made for Life**

The all-in-one system for patients who require radical bone resections for:

- **Proximal Femur**
- **Distal Femur**
- **Total Femur**
- **Proximal Tibia**

Designed specifically to address the needs of:

- **Orthopaedic Oncology**
- **Revision Surgery**
- **Trauma**



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**Joint Replacements**

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**Trauma**

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**Spine**

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**Micro Implants**

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**Orthobiologics**

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**Instruments**

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**Interventional Pain**

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**Navigation**

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**Endoscopy**

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**Communications**

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**Patient Handling Equipment**

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**EMS Equipment**

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