EXACTECH|**HIP**





M-Series



How do you ensure optimal post-operative joint stability?

Joint stability can be affected by many factors, including offset and leg length. When the selected primary stem provides adequate leg length but the joint requires additional offset, the concern is potential post-operative dislocation. Do you sacrifice leg length or offset? With the AcuMatch® M-Series, you sacrifice neither.

The M-Series uncouples offset and leg length, providing surgeons a unique way to restore joint stability in complex total hip arthroplasty.

Leg length and offset challenges are easily overcome by selecting from two offsets, each with multiple vertical height options.





How do you deal with unpredictable bone loss?

Nothing is routine about revision total hip surgery. It is an art. Frequently, unpredictable bone loss results from retrieval of the previously implanted stem. What do you do?

The AcuMatch M-Series' patented three-segment stem design* gives you more than 33,000 possible neck/metaphyseal/stem constructions. Customize your solutions to a wide range of proximal bone-loss situations.

^{*}Combined with Exactech's five femoral head lengths





How do you establish neck version when using a long curved stem?

In some patients, the bow of the femur is lateral. In others, the acetabulum is slightly anteverted or retroverted. If you need a long curved stem for a patient with atypical anatomy, do you choose neck version or stem placement? With the M-Series, you don't have to choose.

The M-Series allows independent neck version and stem placement to minimize the potential for femoral fractures and post-operative dislocation.



What do you want most from your prosthesis?

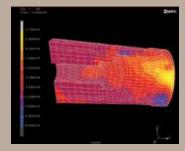
Confidence in design and construction is an important factor in prosthesis selection.

Exactech® optimized the AcuMatch M-Series design using Finite Element Analysis and extensive mechanical testing. Its taper integrity and strength have been validated at a respected independent laboratory. Testing — including bending and torsion — simulated physiological loading which represented activities of daily living. 12,13

The results categorized taper wear as "mild" at loads of 6.4 times body weight. Percentage of damage area was categorized as "mild" with only 5.9 percent to 7 percent of total taper surface area affected.^{12,13}

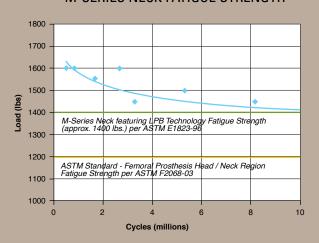
Continuous product improvement is a priority at Exactech, and when new technology was identified that could enhance the fatigue strength of metals, the M-Series was selected as a logical first application. Low Plasticity Burnishing (LPB) is a patented process that increases the fatigue strength of the M-Series neck segment by more than 30 percent.¹⁴

From joint stability to bone loss to atypica anatomy, the AcuMatch M-Series is the answer for difficult surgical situations.



Finite Element Analysis of M-Series Taper

M-SERIES NECK FATIGUE STRENGTH14



REFERENCES

- 1. Davey JR, O'Connor DO, Burke DW, Harris WH. Femoral component offset. *J Arthroplasty*. 1993 Feb:8(1):23-6.
- 2. **Oh I, Harris WH.** Anatomic basis of femoral component design for total hip replacement. Proceedings of the 24th Annual Meeting of the Orthopaedic Research Society, Dallas, 1978.
- 3. Robinson RP, Simonian PT, Gradisar IM, Ching RP. Joint motion and surface contact area related to component position in total hip arthroplasty. *J Bone Joint Surg Br.* 1997 Jan;79(1):140-6.

- 4. **Robinson RP.** Evaluation of offset variation in 192 consecutive hips. Unpublished data.
- 5. Amstutz HC, Lodwig RM, Schurman DJ, Hodgson AG. Range of motion studies for total hip replacements. *Clin Orthop Relat Res.* 1975 Sep;(111):124-30.
- 6. Krushell RJ, Burke DW, Harris WH. Range of motion in contemporary total hip arthroplasty. *J Arthroplasty*. 1991 Jun;6(2):97-101.
- 7. **Vaughn BK.** Management of dislocation in total hip arthroplasty. *Operative Techniques in Orthopaedics*. 1995 Oct;5(4):341-8.

- 8. Yamaguchi M, Akisue T, Bauer TW, Hashimoto Y. The spatial location of impingement in total hip arthroplasty. *J Arthroplasty*. 2000 Apr;15(3):305-13.
- 9. Joshi MG, Advani SG, Miller F, Santare MH. Analysis of a femoral hip prosthesis designed to reduce stress shielding. *J Biomech*. 2000 Dec;33(12):1655-62.
- 10. **Petty W.** Thigh pain following cementless total hip implantation addressed by new femoral design. *Orthopedic: Special Edition.* Vol. 2, No. 2.

- 11. **Postak PD**. The Orthopaedic Research Laboratories, Cleveland, OH, May 2000.
- 12. Krygier JJ, Dujovne AR, Bobyn JD. Fatigue behavior of titanium femoral hip prosthesis with proximal sleeve-stem modularity. *J Appl Biomater.* 1994;5(3):195-201.
- 13. Bobyn JD, Dujovne AR, Krygier AR, Young DL. Surface analysis of the taper junctions of retrieved and in-vitro tested modular prostheses. In (Morrey BF, ed): State-of-the-Art in Total Hip Arthroplasty. Raven Press, Ltd., New York, 1993, pp 287-301.

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