

Reverse[®] shoulder prosthesis



Optimizing the length-tension curve of the deltoid muscle

Why Reverse[®]?

The rotator-cuff-deficient shoulder will produce a spectrum of clinical problems that arise from altered biomechanics and resultant pathophysiology. The progression of symptoms may not be linear. In fact, at some point, loss of sufficient rotator cuff function will lead to joint instability, synergistically causing greater dysfunction than muscle loss alone. The unopposed vertical pull of the deltoid further destabilizes the joint resulting in glenohumeral subluxation, which can lead to progressive articular cartilage breakdown and periarticular bone loss.

A reverse ball and socket is selected because it provides the most mechanically efficient method to neutralize the vertical forces of the unopposed deltoid and maintain joint stability. A Reverse Shoulder Prosthesis is designed to provide enhanced stability of the glenohumeral joint by increasing constraint of the artificial articulation.

Indications

- Grossly rotator-cuff-deficient shoulder joint with severe arthropathy
- Failed joint replacement with a grossly rotator-cuff-deficient shoulder joint
- Evidence of upward displacement of the humeral head with respect to the glenoid
- Loss of glenohumeral joint space

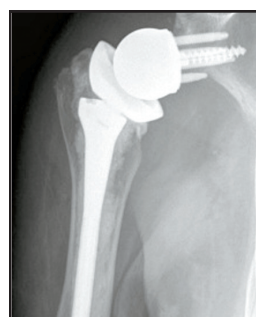
Note: Patients must have a functional deltoid muscle to receive this implant device.



Preoperative

Clinical Challenge

Patients presenting with a rotator-cuff-deficient shoulder and glenohumeral arthritis typically show evidence of upward displacement of the humeral head (rides high) with respect to the glenoid and loss of the glenohumeral joint space. Conventional surgical methods, such as hemiarthroplasty, bipolar, and total shoulder arthroplasty, are often unreliable in improving comfort and function in patients whose shoulders have the above-mentioned pathology.



Postoperative

Clinical Solution

The Reverse Shoulder Prosthesis is a semiconstrained ball and socket device that provides a stable fulcrum of the glenohumeral joint. Stable fixation ensures confidence in selecting from an array of reconstructive options that optimize muscular function and avoid scapular notching.

Humeral Stem

Positioned approximately 12mm below the resected humeral neck osteotomy to ensure that the humeral socket is surrounded by proximal bone support for strength, stability, and fixation.

- Anatomically-shaped proximal body
- Cylindrical distal segment with cement flutes
- 135° head/neck angle when shell is assembled
- Cemented application only
- Primary sizes: 6 x 101mm, 7 x 105mm, 8 x 109mm, 10mm x 116mm, and 12mm x 124 mm
- Revision sizes: 6mm, 8mm, 10mm, and 12mm in one length of 175mm



Titanium alloy humeral stem

Glenoid Baseplate

Fixation of the glenoid baseplate is achieved by using a fixed central screw and four peripheral screws. The central screw is attached to the baseplate at a fixed angle, providing significant compression at the prosthesis-bone interface. The compression imparted by the central screw, in conjunction with the contour of the ingrowth surface of the baseplate (which is plasma sprayed with hydroxyapatite coating), provides an ideal environment for bone ingrowth into the prosthesis.

- Hydroxyapatite coating plasma sprayed over 3DMatrix[®] porous coating
- 26.4mm diameter baseplate with a 6.5mm centralized bone screw in one length of 30mm
- 5.0mm locking bone screws for perpendicular placement
- 3.5mm nonlocking bone screws for angled placement in any direction up to 12 degrees



Titanium alloy glenoid baseplate

Humeral Socket

Designed to stabilize the glenohumeral joint by directing forces through the center of the glenosphere, converting the centrifugal (outward) forces into centripetal (inward) forces. Humeral sockets are available in two different levels of constraint to optimize either stability or range of motion.

- Morse taper fixation to the humeral stem
- Shell sizes: neutral, +4mm offset, and +8mm offset
- Insert sizes: 32mm, 36mm, and 40mm in both standard and semiconstrained options
- 18 different sizing configurations



Titanium alloy shell with snap-in compression molded polyethylene insert

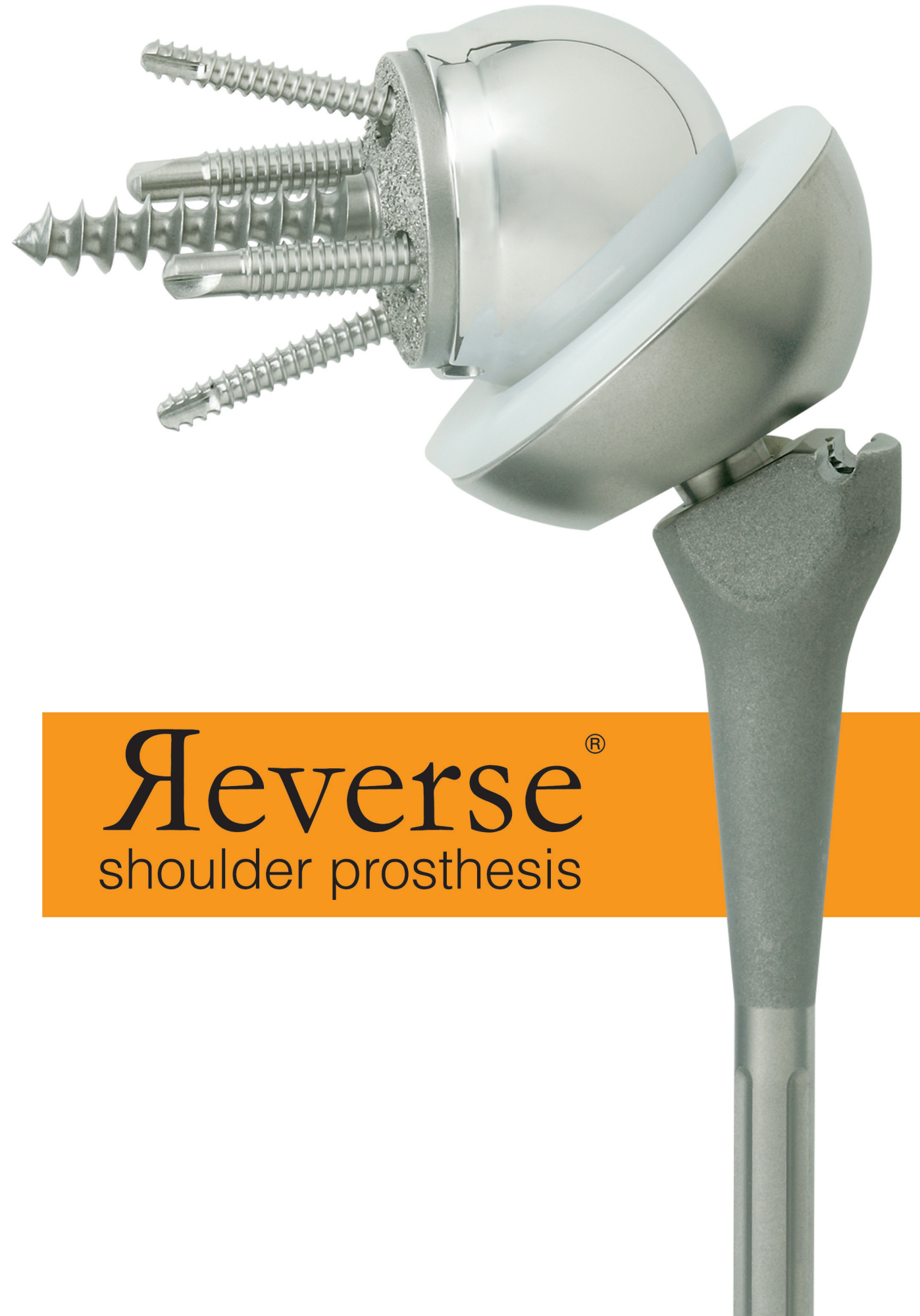
Glenoid Head

Larger glenoid heads provide greater stability, and smaller glenoid heads provide greater range of motion. Glenoid heads with a center of rotation that is close to the glenoid (36mm -4mm offset, 40mm neutral, and 40mm -4mm offset) minimize stress at the site of attachment. Glenoid heads with a center of rotation further from the glenoid (32mm neutral, 32mm -4mm offset, and 36mm neutral) optimize muscular function and minimize scapular notching.

- Reverse morse taper fixation to the glenoid baseplate
- Sizes: 32mm, 36mm, and 40mm available in neutral and -4mm offset
- 3.5mm titanium alloy retaining screw mates into the glenoid head for additional security



Wrought cobalt chrome glenoid head



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CAUTION: Federal Law (USA) restricts
this device to sale by or on the order
of a physician.

See package insert for a complete listing
of indications, contraindications, warnings,
and precautions.

DJO[™]
surgical