

Instructions for Use  
**Ceramic Femoral Head**



Manufacturer  
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### DESCRIPTION

The Ceramic Femoral Heads are intended for use with the Ortho Development® Encompass® and Ovation® hip stems. Heads are provided with a 12/14 taper and are available in the following configurations:

	<b>BIOLOX® Forte</b>	<b>BIOLOX® Delta</b>
<b>Material</b>	Alumina (Al <sub>2</sub> O <sub>3</sub> )	Alumina (Al <sub>2</sub> O <sub>3</sub> ) Zirconia (ZrO <sub>2</sub> )
<b>Head Sizes</b>	28mm*, 32mm*, 36mm	28mm, 32mm, 36mm, 40mm
<b>Offsets</b>	Short, Medium, Long	Short, Medium, Long, Extra Long**

\* For use with Press-fit (Ti-6Al-4V) stems only.

\*\* Available in 36mm and 40mm heads only.

All components are provided in individually sterilized packaging.

### INDICATIONS

Total hip arthroplasty is indicated for the following conditions:

1. Notably impaired hip joints due to osteoarthritis, rheumatoid arthritis and/or post traumatic arthritis.
2. Previously failed hip surgery.
3. Fractures of the femoral neck or head.
4. Avascular necrosis of the femoral head.
5. Congenital dysplasia or other structural abnormalities where sufficient bone stock exists to properly seat the prosthesis.

### CONTRAINDICATIONS

1. Any joint with active or suspected local or systemic infection.
2. Any pathological condition of the joint that would preclude rigid fixation, appropriate range of motion or adequate support or fixation of the component.
3. Loss of musculature, neuromuscular compromise or vascular deficiency in the affected limb rendering the procedure unjustifiable.
4. Certain systemic or metabolic bone conditions.
5. Skeletal immaturity.
6. Poor bone quality that cannot provide adequate support or fixation of the implant.
7. Any disease, ligamentous or severe muscle laxity or inadequate soft tissue coverage which may compromise the normal healing process or function of the implant.
8. Obese or overweight patients who may place undue loads on the prosthesis which can result in failure of the device.
9. Pathological conditions, neuromuscular disorders or mental conditions whereby the risks associated with these conditions outweigh the benefits to be derived.

### PRECAUTIONS

Before using any implant the surgeon should be familiar with the fundamentals of hip arthroplasty as well as the limitations of the device. Instruction should be given to the patient on the limitations of the prosthesis and how

to modify their lifestyle accordingly. Proper selection of the implant is extremely important as the potential for success in total joint replacement is increased by the selection of the proper size implant. Total joint replacement requires careful seating and adequate bone support and should be restricted to limited functional stress. Extreme care should be taken by the surgeon and the O.R. staff to protect the component surface from being marred as a result of contact with metal or any abrasive objects.

The Ceramic Femoral Head should not be used with hip systems other than those specified by Ortho Development® Corporation and vice versa, unless specifically designed and labeled for such use. These devices are intended for use with components, trials, and instruments manufactured by Ortho Development®. Different specifications and dimensional incompatibilities among the various systems may cause premature failure.

The Ceramic Femoral Head has not been evaluated for safety and compatibility in the MR environment. The Ceramic Femoral Head has not been tested for heating or migration in the MR environment.

## **WARNINGS**

The 28mm BIOLOX® Forte Ceramic Femoral Head should not be used with a hip stem manufactured from forged Cobalt-Chrome Alloy (CoCrMo, ASTM F-799).

The Ceramic Femoral Head is sold sterile. Do not implant this or any device that has been used or that has evidence of damage or tampering. Take extreme care to protect the device from coming in contact with any hard or abrasive surfaces especially in polished bearing or machined taper areas. The machined taper surface of the femoral trunion/neck must be dry and free from any tissue or fluid at the time of assembly with the femoral head to ensure proper seating of the implant. The femoral head must be properly impacted to prevent neck length discrepancy, disassociation, or dislocation. Never tamper with the implant. Do not bend or contour the implant, as this may reduce the fatigue strength and may cause immediate or eventual failure of the implant. If revision surgery becomes necessary, do not reuse a previously implanted ceramic femoral head.

The following factors may tend to impose risk of implant failure:

1. Obesity.
2. Heavy Labor.
3. Active sports participation.
4. History of falls.
5. Drug or alcohol addiction and/or abuse.
6. Foreign body sensitivity.
7. Severe deformities, congenital dislocation.
8. Local tumors of the bone.
9. Systemic and metabolic bone disorders.
10. History of infectious disease.

## **ADVERSE EFFECTS**

All prosthetic replacements have the potential for adverse effects including but not limited to:

### **Intraoperative**

1. Acetabular/Femoral perforation.
2. Femoral fracture during bone preparation or impaction.
3. Damage to blood vessels or nerves.
4. Death (secondary to cardiac arrest).
5. Subluxation or dislocation of the implant due to selection and/or positioning of components and/or muscle and fibrous tissue laxity.
6. Undesirable shortening or lengthening of the affected extremity.
7. Traumatic arthrosis of the knee from intraoperative positioning of the extremity.
8. Inadequate abutment in the direction of the resultant joint force.

### **Early Postoperative**

1. Cardiovascular disorders including venous thrombosis, pulmonary embolism, pneumonia, atelectasis, cerebro-

vascular accident, myocardial infarction, and death.

2. Hematoma and delayed wound healing.

3. Systemic or wound infection.

4. Sensitivity or allergic reactions to the materials used to manufacture the component.

### **Late Postoperative**

1. Trochanteric avulsion from excessive muscular tension or early weight bearing and inadvertent intraoperative weakening.

2. Aggravated problems in the knee and ankle joints of the affected or contralateral extremities caused by leg length discrepancy.

3. Femoral or acetabular fracture by trauma or excessive loading, bone defects from previous surgery or reaming, and bone resorption.

4. Failure due to implant fracture.

5. Tissue reactions, allergic reactions, and loosening caused by metallic corrosion or the accumulation of wear debris from the acetabular socket or loose particles.

### **MAGNETIC RESONANCE (MR)**

The Ceramic Femoral heads have not been evaluated for safety and compatibility in the MR environment. The Ceramic Femoral heads have not been tested for heating, migration, or image artifact in the MR environment. The safety of the Ceramic Femoral heads in the MR environment is unknown. Scanning a patient who has this device may result in patient injury.

### **PACKAGING AND STERILITY**

All implants have been sterilized by a minimum of 25 kGy gamma irradiation at a sterility assurance level of  $10^{-6}$ . Sterile product packaging should be inspected for flaws before and after opening. In the presence of a flaw or if implant sterility has been compromised the product must be considered non-sterile and should not be implanted. Resterilization of the implant is not recommended.

### **INSTRUMENT STERILITY**

All Instruments should be thoroughly cleaned prior to sterilization. \*Please refer to the Ortho Development Reusable Instrument Care Manual for cleaning and sterilization details.

Cycle Type	Minimum Sterilization Exposure Temperature	Minimum Sterilization Exposure Time	Minimum Dry Time*
Prevacuum	132° C (270° F)	4 minutes	30 minutes

### **PRODUCT HANDLING**

Implants should always be stored unopened in their respective protective packages. Prior to use, inspect packaging for damage which may compromise sterility. When removing the implant from its packaging, the relevant aseptic techniques must be observed. Protect the prosthesis from contact with objects which may damage the surface finish. Inspect each implant prior to use for visual damage. Do not implant this or any device that has been used, even if it appears undamaged.

### **PRODUCT COMPLAINTS**

Any complaint or dissatisfaction with product quality, performance, labeling, and/or safety should be reported to Ortho Development® Corporation. If any of the implants or instruments “malfunction” (i.e., do not meet any of their performance specifications or does not perform as intended), and/or are suspected to have caused or contributed to the death or serious injury of the patient, Ortho Development® Corporation should be notified immediately by phone, fax or written correspondence.

When filing a complaint, please provide the product description, product number, lot number, complainant’s name and address, and the nature of the complaint.

**CAUTION**

Federal Law (USA) restricts this device to sale, distribution and use by or on the order of a physician.

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