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The OMNIHIP™ System OMNI ARC™ Hip Stem*

SYMBOLS Glossary per ISO 15223-1

5.1.1	Medical Device Manufacturer
5.1.3	Date of Manufacture
5.1.4	Use By Date
5.4.2	Do not Re-use
5.4.4	See Instructions for Use
5.2.8	Do Not Use if Package is Damaged
$R_{\!$	Caution: Federal law (USA) restricts this device to sale by or on the order of a physician.
QTY	Quantity
STERILE EO	Sterilized Using Ethylene Oxide
LOT	Batch Code
5.1.6 REF	Catalogue Number
MD	Medical Device
MR	MRI Safety Information

PRODUCT HANDLING

Implants are provided sterile and should always be stored unopened in their respective protective containers. Prior to use, inspect package for damage that may compromise sterility. If packaging has been opened or damaged, contact manufacturer's representative. When unpacking the implant, verify the labeling for correct REF number (Product Code) and size. When removing the implant from its packaging, relevant aseptic handling must be observed. Protect prosthesis from contact with objects that may damage the surface finish. Visually inspect each implant prior to use for damage. Procedures for implanting and removal are available upon request.

DESCRIPTION

The OMNI ARC™ Hip Stem is a curved rectangular tapered stem available in various sizes and neck options. The femoral stems are manufactured from titanium alloy. The OMNI ARC Hip Stem is for use with OMNI and Corin modular femoral heads.

- Use of Femoral heads with an offset greater than +7mm with the OMNI ARC Hip stem is not indicated.
- Use of femoral heads with a shorter (more negative) offset than -4mm with the OMNI ARC Hip stem is not indicated.
- The flexion/extension range of motion is reduced with the combination of the ARC size 5, 8 deg varus stem with the Trinity EPW liner and the Corin 36 -4mm femoral head.

For more details regarding the compatibility between implants, please contact your OMNI representative or you could find more details on the following link www.coringroup.com/compatibility.

MATERIALS:

- ARC stem: Titanium alloy (ASTM F 136).
- Coating: Unalloyed Titanium (ASTM F1580), HA: Hydroxyapatite (ASTM F 1185).

INDICATIONS FOR USE

The indications for use of the OMNI ARC Hip Stem in hip arthroplasty include the following conditions, as appropriate:

- Non-inflammatory degenerative joint disease, including osteoarthritis and avascular necrosis;
- Rheumatoid arthritis;
- Correction of functional deformity:
- Congenital dislocation;
- Revision procedures where other treatments or devices have failed:
- Femoral neck and trochanteric fractures of the proximal femur.

The OMNI ARC Hip Stem is indicated for cementless use only and single use implantation.

Absolute contraindications include:

- Infection or sepsis or osteomyelitis;
- Insufficient bone structure or quality that may affect the stability of the implant;
- Rapid joint destruction or bone absorption;
- Skeletal immaturity;
- Muscular, ligamentous, neurological, vascular deficiencies or poor skin coverage, that may compromise the affected extremity;
- Alcoholism or other addictions;
- Sensitivity to the implant materials;
- High levels of physical activity (e.g. competitive sports, heavy physical labor);
- Obesity that can produce loads on the prosthesis, that can lead to failure of the fixation of the device or the device itself;

Relative contraindications include:

- Uncooperative patient or a patient with neurological disorders and incapable of following instruction;
- Metabolic disorders that may impair bone formation or bone quality:
- Distant foci of infections.

WARNINGS AND PRECAUTIONS

While these implants are not intended to withstand activity levels and loads of normal healthy bone, they are a means of restoring mobility and reducing pain for many patients.

In using joint replacement implants, the surgeon should be aware of the following:

- The correct selection of implant components is extremely important. The potential for success in joint replacement is increased by the selection of the proper size, shape and design of the implant. Joint replacement prostheses require careful seating and adequate bone support, and should be restricted to limited functional stress. The surgeon is to be thoroughly familiar with the implants, instruments, and surgical procedure prior to performing surgery.
- In selecting patients for joint replacement surgery, the following factors can be of extreme importance to the eventual success of the procedure:
- 1. The patient's weight. An overweight or obese patient can produce loads on the prosthesis that can lead to

CONTRAINDICATIONS

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- failure of the prosthesis. This becomes a major consideration when a small prosthesis must be used.
- The patient's occupation or activity. If the patient is involved in an occupation or activity, that includes substantial walking, running, lifting, or muscle strain, the resultant forces can cause failure of the fixation, the device or both.
- A condition of senility, mental illness or alcoholism.
 These conditions, among others, may cause the patient to ignore certain necessary limitations and precautions, leading to failure or other complications.
- 4. Foreign body sensitivity. Where material sensitivity is suspected, appropriate tests should be performed prior to material selection or implantation.
- 5. Certain degenerative diseases. In some cases, the progression of degenerative disease may be so advanced at the time of implantation that it may substantially decrease the expected useful life of the appliance. For such cases, total joint replacement can only be considered a delaying technique or temporary relief.
- The correct handling of the implant is extremely important. Care must be taken to protect mating surfaces and polished bearing surfaces from nicks and scratches that could become the focal point for failure. Do not tamper with the implant as contouring or bending of the implant may reduce its service life and may cause immediate or eventual failure under load.
- Standard cleaning procedures cannot be relied upon to remove contamination from the porous and HA coating.
- A surgical implant should not be reused. Even though a
 used implant may appear undamaged it may have
 small defects and internal stress patterns that may lead
 to failure. Use only new prosthesis of the current
 design.
- Resterilization of the device is not recommended.
- Bone excision should be limited to the amount necessary to accommodate the implants. Prior to closure, the surgical site should be thoroughly cleaned of bone chips, bone cement or other detritus that may cause a third body wear problem. Range of motion should be checked for impingement or instability.
- Postoperative care is important. The patient should be instructed on the limitations of these devices and should be cautioned regarding load-bearing, ranges of motion, and activity levels permissible. Excessive physical activity and trauma affecting the replaced joint have been implicated in premature failure by loosening, fracture and/or wear of the prosthesis implant. Early

- load-bearing should be carefully controlled. The patient should be advised to report any related pain, decrease in range of motion, swelling, fever, and unusual incidences.
- The modular head component must be firmly seated to prevent disassociation. Scratching of modular heads and taper should be avoided. Repeated assembly and disassembly of the head and taper could compromise the taper locking features. The head component should be changed only when clinically necessary. The interfaces should be clean and free from debris prior to assembly.

POSSIBLE ADVERSE EFFECTS

The possible adverse effects are similar to those occurring with any hip arthroplasty and include the following:

- Dislocation or subluxation of the hip ball (femoral head) and hip socket (acetabulum).
- Loosening or migration of components due to trauma and/or loss of fixation.
- Accelerated wear of the polyethylene articulating surfaces of acetabular components. Such wear may be initiated by particles of cement, metal, or other debris that can cause abrasion of the articulating surfaces. Accelerated wear shortens the useful life of the prostheses, and may lead to early revision surgery to replace the worn components.
- Histiocytic granuloma formation and osteolysis around the implant due to wear debris.
- Aseptic, lymphocyte-dominated vasculitis-associated lesion (or pseudotumor) formation due to fretting wear and/or corrosion at modular implant junction(s).
- Fracture of the implant as the result of strenuous activity, obesity, improper alignment, inadequate fixation, or extreme duration of service.
- Urological complications, especially urinary retention and infection.
- Dislocation, wear, dissociation, or fracture due to device impingement during hip articulation.
- Other complications associated with general surgery, such as drugs, ancillary devices, and blood loss or transfusions.

Intraoperative and early postoperative complications can include:

- Damage to blood vessels;
- Temporary or permanent neuropathies;
- Traumatic arthrosis of the knee from Intraoperative positioning of the extremity;

- Cardiovascular disorders including venous thrombosis, pulmonary embolism, or myocardial infarction;
- Hematoma:
- Delayed wound healing;
- · Infection;
- · Femoral perforation;
- · Fracture of the femur;
- Undesirable shortening or lengthening of the limb.

Late postoperative complications can include:

- Aggravated problems of the knee or ankle of the affected limb or contralateral extremity by leg length discrepancy, too much femoral medialization, or muscle deficiency;
- Femoral fracture by trauma or excessive loading, particularly in the presence of poor bone stock;
- Periarticular calcification or ossification, with or without impediment to joint mobility;
- Inadequate range of motion due to improper selection or positioning of components, by femoral impingement and periarticular calcification;
- Excessive joint pressures and pain with ambulation due to excessive scarring of the joint capsule and surrounding tissues;
- Infection;
- Trochanteric avulsion as a result of excessive muscular weakening;
- Trochanteric non-union due to inadequate reattachment and/or early weight bearing.

CAUTION

Disposal of implants should be carried out using the hospital's standard method for non-biodegradable non-combustible medical waste.

MRI SAFETY INFORMATION

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

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*U.S. and international patents pending. Additional information about the OMNI ARC Hip Stem may be obtained from OMNIIife science, Inc.