

**INSTRUCTIONS FOR USE  
FOR THE TREATMENT  
OF  
CUSTOM MADE PROSTHESES  
Osteosynthesis implant**

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## 1 WARNINGS

The warnings are identified with a progressive code **N** and **Rid** is shown next to it where Rid identifies the risk assessed in the risk analysis. Follow the warnings for safe use of the Customized Device.

|                                                                                                           |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>GENERAL WARNINGS</p> |                  | <p><b>For any complaint or report related to GPI products, please send an email to:</b><br/> <a href="mailto:segnalazionidm@pec.gpi.it">segnalazionidm@pec.gpi.it</a></p>                                                                                                                                                                                                                                                                                                                          |
| 1                                                                                                         | R-ST01           | Medical devices supplied NON-STERILE require an additional cleaning and sterilization process before implantation.                                                                                                                                                                                                                                                                                                                                                                                 |
| 2                                                                                                         | R ST01           | Use only neutral and antibacterial detergents for cleaning devices manufactured by GPI S.p.A.                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3                                                                                                         | R SP03           | Do not use products from damaged or opened packaging.                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 4                                                                                                         | R ST02           | For medical devices supplied NON-STERILE, carefully follow the sterilization procedure indicated for each type of material.                                                                                                                                                                                                                                                                                                                                                                        |
| 5                                                                                                         | R ST02           | Do not steam sterilize polyethylene (UHMWPE) components.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 6                                                                                                         | R ST01           | Do not subject the medical device to re-sterilization.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7                                                                                                         | R P12            | To ensure safety and efficacy during surgery, the prosthesis must not be combined with prostheses from other sources unless this combination has been analyzed during the design phase.                                                                                                                                                                                                                                                                                                            |
| 8                                                                                                         | R CH4            | The medical device is designed to fit exclusively the patient's anatomy and the pre-operative plans defined by the surgeon, based on a 3D anatomical bone model derived from the patient's CT scan. These plans include the desired patient alignment before the CT scan or on the bone model once produced. It is crucial that the surgeon accurately reproduces the patient-specific plan and any anatomical shaping during implantation to ensure correct positioning of prosthetic components. |
| 9                                                                                                         | R CH1            | To ensure safety and efficacy during surgery, prosthesis placement does not require the use of bone cement or other filler agents.                                                                                                                                                                                                                                                                                                                                                                 |
| 10                                                                                                        | R CH1            | The components of the joint prosthesis are intended to be implanted as matched sets.<br>To ensure safety and efficacy during surgery, the placement of the medical device does not require the use of components supplied by other manufacturers (except for fixation screws).                                                                                                                                                                                                                     |
| 11                                                                                                        | R CH2            | Prosthesis components contain articulating surfaces that can be damaged if handled improperly. Any damage to these surfaces may affect the long-term performance of the prosthesis. Minimize contact with the articulating surfaces. Prosthesis components must only be handled with smooth, blunt instruments to avoid damage. Do not use instruments with serrated edges or sharp tips.                                                                                                          |
| 12                                                                                                        | R CH2            | The bone model is fragile. Handle with care.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 13                                                                                                        | R CH2            | The surgeon must be familiar with the application of the surgical medical device before use.                                                                                                                                                                                                                                                                                                                                                                                                       |
| 14                                                                                                        | R CH2            | The supplied instrumentation must never be used for tasks it was not specifically designed for. Improper use may cause damage to the instruments and trauma to the patient or operator.                                                                                                                                                                                                                                                                                                            |
| 15                                                                                                        | R CH2            | Avoid storing or transporting instruments in contact with each other, as this may cause damage.                                                                                                                                                                                                                                                                                                                                                                                                    |
| 16                                                                                                        | R CH2            | Do not use damaged instruments.<br>Damaged instruments must be replaced before use.<br>Do not attempt to straighten or modify prosthetic components or instrumentation, as this may compromise their strength and lead to failure or injury.                                                                                                                                                                                                                                                       |
| 17                                                                                                        | R CH6            | Before implanting the prosthesis, physically verify its integrity, compliance, and serial number. The serial number is linked to the medical prescription and declaration of conformity and is marked on the component where size permits, identifying the patient. Verify the exact match of the patient-linked serial number on the declaration, label, and prosthesis before proceeding with implantation.                                                                                      |
| 18                                                                                                        | R-POST1          | The physician must inform patients of the limitations of the prosthesis.<br>As these are custom-made prostheses, limitations vary depending on the prosthesis and the patient and are the responsibility of the prescribing physician                                                                                                                                                                                                                                                              |
| 19                                                                                                        | R-POST2<br>R-PP7 | The physician must inform the patient about potential interactions resulting from exposure to electromagnetic or radiofrequency fields.                                                                                                                                                                                                                                                                                                                                                            |
| 20                                                                                                        | R-CH7            | The axial torque for tightening 2.7 mm screws must not exceed 576 N-mm.                                                                                                                                                                                                                                                                                                                                                                                                                            |

|    |        |                                                                                                                                                                                                                                                                                                                  |
|----|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 21 | R-ST03 | Check that the pouches are intact and the components are correctly packaged and, where required, properly positioned within the sterilization devices to avoid the risk of pouch rupture.                                                                                                                        |
| 22 | R-CH9  | Prostheses must not be handled or modified unless otherwise indicated in the design specifications. Authorized modifications must be performed exclusively outside the operating field.                                                                                                                          |
| 23 | R-ST22 | If the sterile packaging is damaged or opened, the device is NO LONGER STERILE and must be discarded. In this case, contact the authorized representative or manufacturer.                                                                                                                                       |
| 24 | R-ST21 | For devices supplied sterile – Sterilization expiry date: Do not use the device after the date indicated on the label (MDR Annex I 11.3).                                                                                                                                                                        |
| 25 | R-ST09 | For devices supplied sterile – EtO residues: The device is controlled according to ISO 10993-7 to ensure that Ethylene Oxide (EtO) and Ethylene Chlorohydrin (ECH) residues remain within acceptable safety limits.<br>In rare cases, hypersensitive patients may experience allergic reactions to EtO residues. |
| 26 | R-CH8  | For devices supplied sterile – DO NOT RE-STERILIZE: The device is sterilized only once using a validated EtO process.<br>Any attempt at re-sterilization may compromise the device's structure, performance, and safety, with the risk of releasing toxic residues or functional failure.                        |

## 2 INTENDED USE

### 2.1 PROSTHETICS FOR OSTEOSYNTHESIS IMPLANTS

The osteosynthesis implant prosthesis is a class IIb, implantable, custom-made, non-active medical device intended to be used to support bone, cartilaginous, tendon or ligament structures.

Medical application areas can be:

1. fracture treatment
2. tumor treatment
3. stabilization of an osteotomy
4. stabilization of the arthrodesis
5. lengthening, shortening or removal of bone
6. bone replacement support (bone graft sites)
7. in addition to joint replacement
8. scoliosis treatment
9. spinal stabilization
10. treatment of degenerative diseases
11. tendon reconstruction
12. ligament reconstruction

The MD is composed of a combination of one or more components packaged together in order to be used for the reconstruction of bone, cartilaginous, tendon or ligament structures and possibly a surgical set composed of an anatomical bone model and cutting templates.

These components have been customized exclusively for the patient identified on the device label, they are made via Additive Manufacturing (3D printing) or via CNC milling machine (Computer Numerical Control) based on a 3D project.

The project is developed on the basis of DICOM images and on the specific prescription written by any person authorized by national law by virtue of his personal qualification, which indicates, under the responsibility of that person, the specific characteristics of this design.

The prostheses are made with biocompatible material such as Ti64 titanium alloy, UHMWPE polyethylene, PEEK.

Surgery for the reconstruction of bone, cartilaginous, tendon or ligament structures must be performed by medical and nursing personnel previously trained and specialized for this type of operation in operating rooms equipped for this purpose.

### 2.2 WARNINGS OR EXCLUSIONS

The prostheses have specific design characteristics provided under the responsibility of the requesting physician who is authorized by national law by virtue of his professional qualifications.

Due to their personalized characteristics and the materials used, the prostheses are for single and exclusive use by the patient.

The screws used for anchoring the prostheses are not supplied with the prostheses, unless there is a request for a customized production, in which case they are an integral part of the MD, but are defined in the design phase by the medical staff according to the most appropriate standard for the specific surgery.

### 3 CONTRAINDICATIONS AND PRECAUTIONS

The use of the osteosynthesis implant shall be carefully evaluated in patients presenting with:

- active or chronic infections
- insufficient bone quantity or quality
- systemic conditions increasing susceptibility to infection
- known allergy to device materials
- poor patient compliance or harmful habits

### 4 NORMATIVE REFERENCES

|                                 |                                                                                                                                                                                                                                                         |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MDR 745/2017                    | Reg EU medical device                                                                                                                                                                                                                                   |
| UNI EN ISO 9001:2015/A1:2024    | Quality management systems — Requirements                                                                                                                                                                                                               |
| UNI EN ISO 13485:2016 /A11:2021 | Medical devices – Quality management systems – Requirements for regulatory purposes                                                                                                                                                                     |
| UNI CEI EN ISO 14971:2022       | Medical devices - Application of risk management to medical devices                                                                                                                                                                                     |
| UNI EN 62366-1:2015/A1:2020     | Medical devices - Application of usability engineering to medical devices                                                                                                                                                                               |
| UNI EN ISO 14155:2025           | Clinical investigation of medical devices for human subjects - Good clinical practice                                                                                                                                                                   |
| UNI EN ISO 10993-1: 2021        | Biological evaluation of medical devices - part 1: evaluation and testing within a risk management process                                                                                                                                              |
| UNI EN ISO 14630:2025           | Non active surgical implants - General requirements                                                                                                                                                                                                     |
| UNI EN ISO 14602:2012           | Non-active surgical implants - Implants for osteosynthesis - Particular requirements                                                                                                                                                                    |
| UNI EN ISO 16061:2021           | Instruments for use in association with non-active surgical implants - General requirements                                                                                                                                                             |
| UNI EN ISO 5832-3:2022          | Implants for surgery - Metallic materials - Part 3: Wrought titanium 6-aluminium 4-vanadium alloy                                                                                                                                                       |
| ASTM F136-13(2021)e1            | Standard Specification for Wrought Titanium-6Aluminum-4Vanadium ELI (Extra Low Interstitial) Alloy for Surgical Implant Applications (UNS R56401)                                                                                                       |
| UNI ISO 5832-4:2024             | Implant for surgery - metallic materials - Wrought cobalt-chromium-molybdenum casting alloy                                                                                                                                                             |
| ISO 5834-2:2025                 | Implants for surgery — Ultra-high-molecular-weight polyethylene — Part 2: Moulded forms                                                                                                                                                                 |
| ASTM F648 -21                   | Standard specification for ultra-high-molecular-weight polyethylene powder and fabricated form for surgical implants                                                                                                                                    |
| ASTM F2026 – 23                 | Standard Specification for Polyetheretherketone (PEEK) Polymers for Surgical Implant Applications                                                                                                                                                       |
| ASTM F75-23                     | Standard Specification for Cobalt-28 Chromium-6 Molybdenum Alloy Castings and Casting Alloy for Surgical Implants (UNS R30075)                                                                                                                          |
| UNI CEI EN ISO 15223-1:2021     | Medical devices — Symbols to be used with information to be supplied by the manufacturer Part 1: General requirements                                                                                                                                   |
| UNI EN ISO 17665:2024           | Sterilization of health care products - Moist heat - Requirements for the development, validation and routine control of a sterilization process for medical devices                                                                                    |
| UNI EN ISO 14937:2009           | Sterilization of health care products — General requirements for characterization of a sterilizing agent and the development, validation and routine control of a sterilization process for medical devices                                             |
| UNI EN ISO 17664-1:2021         | Processing of health care products manufacturer for the processing of medical devices —Information to be provided by the medical device- Part 1: Critical and semi-critical medical devices                                                             |
| UNI EN ISO 11135-1:2020         | Sterilization of health-care products validation and routine control of a sterilization process for medical devices - Ethylene oxide — Requirements for the development, validation and routine control of a sterilization process form medical devices |

## 5 MATERIALS

All prosthetic materials comply with the UNI ISO/ASTM surgical prosthesis standards indicated\*.

- **Titanium alloy Ti-6Al-4V ELI**, conforming to ISO 5832-3/ASTM F136 standards\*

*Chemical Composition*

- Titanium (Ti): Balance
- Aluminum (Al): 5.5-6.5%
- Vanadium (V): 3.5-4.5%
- Oxygen (O): max 0.13%
- Nitrogen (N): max 0.05%
- Carbon (C): max 0.08%
- Hydrogen (H): max 0.012%
- Iron (Fe): max 0.25%

- **Co-28Cr-6Mo Cobalt-Chromium-Molybdenum alloy**, compliant with ISO 5832-4/ASTM F75\* standards

*Chemical Composition:*

- Cobalt (Co): Balance
- Chromium (Cr): 27.0-30.0%
- Molybdenum (Mo): 5.0-7.0%
- Nickel (Ni): max 0.5%
- Iron (Fe): max 0.75%
- Carbon (C): max 0.35%
- Manganese (Mn): max 1.0%
- Silicon (Si): max 1.0%
- Nitrogen (N): max 0.25%

- **Ultra-high molecular weight polyethylene UHMWPE GUR 1050 type 2**, ISO 5834 -2 / ASTM F648 standard

*Chemical Composition*

- Ethylene homopolymer according to ASTM D4020: Balance
- Ash: max 125 mg/kg max
- Titanium (Ti): max 40 mg/kg
- Chlorine (Cl): max 30 mg/kg
- Aluminium (Al): max 20 mg/kg
- Calcium (Ca): max 5mg/kg

- **polyetheretherketone (PEEK)**, ASTM F2026 standard, material certified at origin ISO 10993-1 Invibio Optima™

*Chemical composition:*

- Total heavy metals (Ag, As, Bi, Cd, Cu, Hg, Mo, Pb, Sb, and Sn): maximum 100 ppm

**NOTE:** Standard prosthesis fixation systems, identified by the surgeon in the initial design phase, are not supplied with the prosthetic MD.

\*For 3D printed components, compliance with the indicated standards refers to chemical and mechanical properties.

Details of the materials of composition of the prosthetic MD are given in the declaration of conformity.

### 5.1 STORAGE CONDITIONS OF THE MATERIALS

The prosthetic MD should be stored in a clean, dry environment and should be protected from sunlight and extreme temperatures.

### 5.2 DISPOSAL OF MATERIALS

The disposal of removed materials, including instruments, must be carried out in accordance with the standard for special surgical waste, in use in operating theatres.

### 5.3 DISPOSAL OF PACKAGING

To help protect the environment, please dispose of the packaging properly by following the instructions below.

| TYPE OF MATERIAL              | URBAN WASTE | SPECIAL WASTE |
|-------------------------------|-------------|---------------|
| Sealing paper— PAP 20         | PAPER       | EER 15.01.01  |
| Corrugated cardboard — PAP 20 | PAPER       | EER 15.01.01  |
| Document folder — PAP 20      | PAPER       | EER 15.01.01  |
| Adhesive seal — PVC 3         | PLASTIC     | EER 15.01.02  |
| Adhesive tape — PP 5          | PLASTIC     | EER 15.01.02  |
| Sleeve — LDPE 4               | PLASTIC     | EER 15.01.02  |

Before disposal, reduce the volume of packaging; place each item of packaging in the designated recycling bin; always check your municipality's regulations.

## 6 PRECAUTIONS

It is the responsibility of the surgeon using this product to assess the clinical and medical status of the patient and to be aware of all aspects of implantation procedures and potential complications that may occur for each specific case. The results of the surgical procedure may worsen over time and no longer meet the patient's or surgeon's expectations. Therefore, any additional or alternative procedures to be carried out must be weighed. Revision implant surgery is not uncommon, so the surgeon should perform a careful risk-benefit clinical analysis to achieve the best long-term outcome for the patient.

The patient should be informed of the limitations of the reconstruction and the need to avoid loading the implant with excessive loads until an adequate level of fixation and healing has been achieved.

It is the surgeon's responsibility to become familiar with the surgical techniques for implanting these devices through the study of relevant publications, consultation with experienced collaborators, and training on the procedures applicable to this particular prosthesis.

Accepted surgical practice must be followed in post-operative care.



**DO NOT USE COMPONENTS IN OPEN OR DAMAGED PACKAGING.**

### 6.1 MAGNETIC RESONANCE AND RADIOFREQUENCY SAFETY INFORMATION

The metal material used for the prostheses is not considered hazardous or incompatible for MRI and radiofrequency.

However, there are inherent risks associated with the use of metal implants in an MRI and radio frequency environment, including component migration, heat induction, and signal interference or distortion in the vicinity of the components.

Thermal induction of metal systems is a risk that depends on the geometry and material of the components, as well as on MRI and radio frequency aspects such as the power, duration and sequence of the pulses.

Because MRI or radiofrequency equipment is not standardized, the severity of these problems and the likelihood of them occurring with these implants are not known.

The safety and compatibility of these implants in MRI and radio frequency environments have not been evaluated. No tests have been conducted regarding the heating or migration of these systems to these environments.

Because these devices have not been tested, GPI cannot make recommendations regarding the use of magnetic resonance imaging with such implants, or radiofrequency, either regarding safety issues or image accuracy.

Some components are passive metal devices, and there is generally the possibility of mutual interference with certain imaging modalities, including image distortion in MRI and X-ray scattering in CT scans.

## 7 ADVERSE HEALTH EFFECTS OF THE DEVICE

Adverse events may occur after placement of this prosthesis requiring further treatment.

The occurrence of a complication may be related to or influenced by the patient's previous surgical history or previous medical condition.

The adverse events reported in the literature in the clinical practice of prostheses are generally the following:

- Infection
- Chronic or recurrent pain and/or swelling
- Loss of joint mobility due to the development of adhesions (scar tissue), heterotopic bone, or ankylosis
- Dislocation of the prosthesis components
- Wear, movement, breakage or loosening of prosthesis components
- Perforation or dehiscence of surrounding tissues
- Foreign body reaction or allergic reaction to prosthesis components
- Swelling, muscle spasm or hematoma formation
- Peripheral neuropathies

## 8 STERILIZATION

GPI SPA medical devices can be supplied **sterile** or **non-sterile**, depending on the supply specifications required by the customer or the user clinical center.

The devices supplied **sterile** are sterilized using Ethylene Oxide (EtO), according to a validated process in accordance with ISO 11135, which guarantees a Sterility Assurance Level (SAL) of  $10^{-6}$ .

Devices supplied **non-sterile** must be cleaned and sterilized by the user before clinical use, following the instructions in this chapter and in accordance with UNI EN ISO 17665 and UNI EN ISO 14937 standards.

The healthcare facility is responsible for validating and routinely monitoring the cleaning, disinfection and sterilization processes performed prior use.

### 8.1 DEVICES SUPPLIED STERILE

The devices supplied **STERILE** are intended **for single use only (Disposable)**. Sterilization is carried out using **Ethylene Oxide (EtO)**, in accordance with **ISO 11135**.

Before opening the sterile package, the user is required to visually inspect the sterile barrier for integrity.



**Integrity of the package:** Do not use the device if the pouch, blister pack, or seal is open, punctured, moistened, or damaged. A compromised barrier does not guarantee sterility.



**Expiration date:** Do not use the device beyond the date indicated on the label



**If the sterile package is damaged or opened, the device is NO LONGER STERILE and should be discarded. If this occurs, contact your authorized representative or manufacturer.**



**DO NOT RESTERILIZE:** The device is sterilized only once using a validated EtO process.

**Any attempt at resterilization may compromise the structure, performance and safety of the device, with the risk of toxic residue release or functional failure.**



**EtO RESIDUES:** The device is checked in accordance with ISO 10993-7, to ensure that Ethylene Oxide (EtO) and Ethylene Hydrochloride (ECH) residues are within acceptable safe limits.



In rare cases, hypersensitive patients may experience allergic reactions to EtO residues.

## 8.2 DEVICES SUPPLIED NOT STERILE

If the device is supplied non-sterile, the label clearly states "NOT STERILE".

In this case, the user must:

- perform a cleaning and sterilization before clinical use,
- follow the validated procedures in this chapter,
- use sterilization methods appropriate to the construction material (Ti6Al4V, UHMWPE, PEEK, etc.).



Medical devices, supplied in a "NON-STERILE" condition, require an additional cleaning and sterilization process prior to implantation.

All devices produced by GPI SPA can be damaged if subjected to the use of acid-based detergents. It is therefore recommended to use only NEUTRAL AND ANTIBACTERIAL DETERGENTS.



For GPI SPA medical devices that are supplied under NON-STERILE conditions, to make their clinical use safe, it is recommended to follow the sequence specified below.

### A. INITIAL TREATMENT AT THE POINT OF USE

- Remove the outer cardboard packaging box used for shipping
- Take out the inner box with the GPI logo

### B. PREPARATION BEFORE CLEANING

- Remove products from inner packaging
- Disassemble the medical device into its components
- Examine the good condition of the product
- Check that there are no processing residues/dust and if there is any cleaning/unblocking/washing of the holes before sterilization.

### C. CLEANING AND DISINFECTION

Wash manually or mechanically with mild neutral detergent (absolutely non-acidic) and warm water, following the detergent manufacturer's instructions for use; Avoid using the detergent at an extreme concentration. PH-neutral enzymatic cleaners and warm water can be used to facilitate cleaning. Submit to a validated process in accordance with the ISO 15883 series standards.



The use of highly alkaline detergents (pH  $\geq 12$ ) is not recommended. Avoid prolonged exposure to acidic or alkaline solutions and solutions containing chlorides, bromides, or iodine.

After washing, rinse thoroughly with clean, deionized or distilled water.

### D. DRYING

Dry completely before sterilization with a low-particle absorbent tissue, or with an industrial dryer or in a drying booth.

### E. INSPECTION AND MAINTENANCE

Inspect for cleanliness for the absence of any visible residue, especially in the least accessible areas. Thoroughly check the prosthesis components and/or associated instruments for damage, with particular attention to the areas of the devices in the moving parts or joints. Do not use prosthetic components or instruments that have been damaged. In this case, inform the manufacturer immediately, the user must not carry out any maintenance and/or restoration activities.

### F. PACKAGING

Prosthesis components and/or associated instrumentation should be repackaged appropriately at the hospital. They are intended for sterilization in double bags according to the sterilization method for the different products. This SBS must have been validated to demonstrate the ability to oppose an adequate microbial barrier.

### G. STERILIZATION

It has been demonstrated that the following process parameters produce a product with a SAL level of 10<sup>-6</sup> log in accordance with UNI EN ISO 17665 and UNI EN ISO 14937. Other similar cycles may be used but have not been evaluated. It is the responsibility of the user to demonstrate the adequacy of the sterilization cycle used should it vary from the following indications:

#### FOR TITANIUM ALLOY (Ti6Al4V) PROSTHESES AND COMPONENTS

**Steam sterilization:** pre-vacuum steam autoclave sterilization at a temperature of 134 °C for a minimum of 5 minutes.

#### FOR COBALT-CHROMIUM ALLOY (Co28Cr6Mo) PROSTHESES AND COMPONENTS

**Steam sterilization:** pre-vacuum steam autoclave sterilization at a temperature of 134 °C for a minimum of 5 minutes.

#### FOR POLYETHER ETHER KETONE (PEEK) PROSTHESES AND COMPONENTS

**Steam sterilization:** pre-vacuum steam autoclave sterilization at a temperature of 134 °C for a minimum of 5 minutes.

#### FOR HIGH-DENSITY POLYETHYLENE (UHMWPE) PROSTHESES AND COMPONENTS

**Hydrogen peroxide sterilization:** with operating temperature range of 50-55°C, with a minimum residence cycle of 37 minutes + 3 minutes of initialization.

#### FOR HIGH-DENSITY POLYETHYLENE COUPLED WITH TITANIUM ALLOY (UHMWPE+Ti6Al4V) PROSTHESES AND COMPONENTS

**Hydrogen peroxide sterilization:** with operating temperature range of 50-55°C, with a minimum residence cycle of 37 minutes + 3 minutes of initialization.



At the end of the sterilization cycle, check the change of the SBS (sterile barrier system) indicators, the integrity of both the packaging system and the product. In case of anomalies or doubts, consider the product non-compliant and consequently do not make it available to the user, as safety for the patient cannot be guaranteed.

#### H. STORAGE

Store in a clean, cool, dry place away from heat sources.

#### I. TRANSPORT

To prevent damage to medical devices during transport, we recommend the use of appropriate racks, trays or rigid containers. Avoid storing or transporting tools that are in contact with each other as they may be damaged.

## 9 RESTERILIZATION



Do not subject the medical device to the re-sterilization process

The re-sterilization of the device is not allowed, as it has not undergone specific checks and validation.

## 10 LIMITED WARRANTY

GPI warrants that this product meets the manufacturer's specifications and is free from manufacturing defects upon delivery.

These provisions have been validated by the MD manufacturer as being able to achieve the required cleaning and sterilization.

The user must ensure that the preparation and sterilization of the MD, as actually performed using the equipment, materials and personnel achieves the desired result. This requires verification and/or validation and systematic monitoring of the process.



This warranty specifically excludes defects resulting from misuse, abuse, or improper handling of the product after receipt by the user.

## 11 LABEL

The labels applied to the packaging of the medical device have been defined and drafted in accordance with the applicable requirements of Regulation (EU) 2017/745 (MDR), in particular the provisions of Annex I, point 23.2.

Each medical device is supplied with the following labels:

- n.1 general identification label of the MD, applied to the external transport packaging
- n.1 general identification label of the MD, applied to the prosthesis packaging
- n.2 general identification labels of the MD, included inside the prosthesis package
- n.1 specific label identifying each individual component (prosthetic or instrumental)

The labelling of the medical device varies according to the condition of supply:

- For devices supplied sterile, the label clearly states the sterilization method used (e.g. "STERILE EO" for Ethylene Oxide sterilization) and its symbols in accordance with ISO 15223-1, together with the expiration date and the indication "Disposable / Non-reusable".
- For devices supplied **non-sterile**, the label reads "NON-STERILE" along with product identification information and instructions requiring sterilization prior to clinical use.

All labels are designed to ensure clarity, traceability and compliance with applicable regulatory requirements, ensuring that the user can immediately identify the sterility status of the device and the correct mode of use.

## 11.1 EXAMPLES OF GENERAL LABEL

### 11.1.1 EXAMPLE OF GENERAL LABEL FOR MD SUPPLIED STERILE



### 11.1.2 EXAMPLE OF GENERAL LABEL FOR MD SUPPLIED NON-STERILE



**THE FOLLOWING SYMBOLS AND WORDING APPEAR ON THE LABEL:**

- CUSTOM-MADE DEVICE: indicates the type of medical device
- DESCRIPTION of the type of custom-made device in the catalogue (e.g. SURGICAL RECONSTRUCTION OF THE TEMPOROMANDIBULAR JOINT)
-  Catalogue code identifying the MD
-  Serial number: identification number of the prosthesis: YEAR/JOB CODE/N PROSTHESIS: YYYY/XXXXX/N
-  Date of manufacture expressed in year/month
-  Term of use or expiration date expressed in year/month. If not specified, a term of 1 year from the date of manufacture is considered
-  The medical device can be used only once or on a single patient during a single operation
-  Need to consult the instructions for use for important cautionary warnings, such as warnings and precautions, which, for various reasons, cannot be reported on the device itself
-  The medical device has not undergone a sterilization procedure
-  Consult the instructions for use
-  QR links to digital documents (instructions for use)
-  Do not use the medical device if the packaging is damaged or opened
-  Keep away from sources of moisture
-  Keep away from heat and light sources
- UNCEMENTED USE: informs that the MD must be implanted without the use of bone cement
-  Sterilized with Ethylene Oxide

**NOTE:** the unique patient identifier is not shown on the label as it is uniquely linked to the Serial Number and shown on the declaration of conformity.

## 11.2 EXAMPLES OF SINGLE COMPONENT LABEL

The MD is provided with a set of labels to be applied to the casing of each of its components.

Each label shows the serial number of the reference MD (AAAA/CODCOMMESSA/N coding), the code and description of the specific component and the material that composes it to avoid errors during sterilization.

The following are examples of labels for each component of implantable prosthesis supplied in sterile and non-sterile options:

### 11.2.1 EXAMPLE OF LABEL FOR COMPONENT OF MD SUPPLIED STERILE

|                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>GPI spa</b><br>Trento (TN) - ITALY<br>www.gpi-group.com<br><i>Ti6Al4V - UHMWPE</i> | <b>DESCRIZIONE COMPONENTE – LATO SX/DX</b><br><b>COMPONENT DESCRIPTION – Lh/Rh SIDE</b><br><br>USO NON CEMENTATO - UNCEMENTED USE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>REF</b> <i>COMP1</i><br><b>SN</b> <i>AAAA/XXXXXX/n</i>                                                                                                               |       <i>AAAA-MM-GG</i><br> <i>AAAA-MM-GG</i> |

### 11.2.2 EXAMPLE OF LABEL FOR COMPONENT OF MD SUPPLIED NON-STERILE

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
|  : GPI SPA – Via Ragazzi del '99, n.13 -30123 Trento (TN) – ITALY                                                                                                                                                                                                                                                                                                                                                                                                            |                           |
| <b>REF</b> : XXX (art.componente di listino)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                           |
| <b>Descrizione:</b> descrizione REF e DM padre - Y<br><b>Description:</b> REF description and DM root - Y<br><b>Materiale - Material:</b> ex: lega di Titanio Ti6Al4V - Ti6Al4V Alloy                                                                                                                                                                                                                                                                                                                                                                         |                           |
|  : AAAA/MM production                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>SN</b> : AAAA/XXXXXX/N |
|  : Dr. XXXXXX – Hospital: XXXXX                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           |
|      <br>USO NON CEMENTATO - UNCEMENTED USE |                           |

Where Y is the marking of the orientation of the prosthesis component in relation to the body part and can be optionally:

- D if Right component
- S if Left component
- ANT if front component
- POST if rear component
- Not indicated if it has no ambiguity.

## 11.3 EXAMPLES OF INSTRUMENTATION LABEL ASSOCIATED WITH THE MD

The instrumentation for use in association with the MD (e.g. cutting templates and anatomical replicas) is the set of components that assist the implant that cannot be identified as implantable parts of the prosthesis.

The following is an example of a label for the instrumentation provided in sterile or non-sterile options:

### 11.3.1 EXAMPLE OF LABEL FOR INSTRUMENTATION COMPONENT OF THE MD SUPPLIED STERILE

|                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>GPI spa</b><br>Trento (TN) - ITALY<br>www.gpigroup.com<br>PA - Polyamide | DESCRIZIONE STRUMENTAZIONE-LATO SX/DX<br>INSTRUMENT DESCRIPTION- Lh/Rh SIDE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| REF STR1<br>SN AAAA/XXXXXX/n                                                                                                                                  |       AAAA-MM-GG<br> AAAA-MM-GG |

### 11.3.2 EXAMPLE OF LABEL FOR INSTRUMENTATION COMPONENT OF THE MD SUPPLIED NON-STERILE

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  : GPI SPA – Via Ragazzi del '99, n.13 -30123 Trento (TN) – ITALY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| REF : XXX (art.componente di listino)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Descrizione: descrizione REF e DM padre - Y<br>Description: REF description and DM root - Y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Materiale - Material: ex: lega di Titanio Ti6Al4V - Ti6Al4V Alloy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|  : AAAA/MM production<br>SN : AAAA/XXXXXX/N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|  : Dr. XXXXXX – Hospital: XXXXX<br>      |

## 12 IMPLANT CARD

The implant card is provided by GPI to Healthcare Facilities and packaged together with the medical devices produced. In it there are fields that must be completed by the competent healthcare personnel, in particular it is necessary to:

- Complete the card (green parts in the image) with all the information requested by referring to the symbol legend below;
- Give the patient the implant card.

The diagram shows a rectangular implant card with dimensions 54 mm (width) and 85.6 mm (height). The card is divided into two main sections. The left section contains the following fields:

- GPI spa International Implant Card** (pre-printed header)
- Patient name** (handwritten field, preceded by a person icon)
- Implant date** (handwritten field, preceded by a calendar icon)
- Hospital name and address** (handwritten field, preceded by a hospital icon)
- Website address/QRcode** (pre-printed field with a laptop icon and a QR code icon, with the URL <https://implant.card.gpi.it> below)

The right section contains the following fields:

- MD code** (handwritten field, preceded by an MD icon)
- MD description** (handwritten field, preceded by an MD icon)
- SN** (handwritten field, preceded by an SN icon)
- Manufacturer information** (pre-printed text block):
  - GPI spa
  - via Ragazzi del '99, 13
  - 38123 Trento (TN)
  - T +39 0461 381515
  - F +39 0461 381599
  - info@gpi.it
  - gpi@pec.gpi.it
  - Cod. EUDAMED: IT-MF-000020127

- Text printed during the manufacturing process
- Text handwritten by healthcare personnel
- Text pre-printed by the manufacturer

### SYMBOL LEGEND

- Patient's name
- Date of implantation
- Name and address of the healthcare facility
- Website address/QRcode with patient information
- Medical Device Code and Description
- Medical Device Serial Number
- Manufacturer



### Information to be provided to the Patient by the Healthcare Facility

- Any warnings, precautions or measures to be taken by the Patient or a healthcare professional in relation to mutual interference with reasonably foreseeable external influences, medical examinations or environmental conditions.
- Every information on the expected useful life of the devices and on any necessary follow-up.

- Any other information to ensure safe use of the device by the patient, including information on materials and substances to which the patient may be exposed.

## 13 OPERATING INSTRUCTIONS

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Since it is a custom-made device whose design is defined on the basis of a medical prescription, the implant must be positioned following the surgical operating instructions defined by the requesting doctor, based on the preoperative planning and the specific needs of the patient.

## 14 CLINICAL FOLLOW-UP

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Periodic follow-up visits are recommended to monitor the position and status of prosthetic components, as well as to check the condition of the bone. Periodically take post-operative x-rays to get an accurate picture of the condition immediately after the operation and highlight any long-term signs of displacement, loosening, bending or cracking of the components.

In order to be able to implement the surveillance and surveillance plan required by EU Reg 2017/745 and ensure the safety of the performance of its products, GPI spa requires the commitment of its customers to provide for the collection of preoperative data and post-operative follow-up data, using a standardized data collection form.

In particular, the following data must be reported:

### Subjective data

- related to pain, with a scale (VAS 0-10) of pain ranging from "no pain (0)" - "most severe pain (10)"
- reports relating to the current quality of life compared to before the implantation of the prosthesis

### Objective data

- Stability and osseointegration of the prosthesis

Results should be collected at each follow-up interval indicatively for the following time sampling:

- post-operative-immediate
- 7/10 days
- 1 month
- 3 months
- 6 months
- 1 year
- 1 time per year for subsequent years

The collection of clinical data is necessary to evaluate the performance of the prosthesis and the effects on the patient such as: reduction of pain, improvement of functions and quality of life of the patient.

## 15 IMPLANT LIFESPAN

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The estimated lifespan of custom made implantable devices manufactured by GPI is 15 years or higher.

This is based on:

- technical data of wear tests and fatigue simulation (FEM surveys),
- established clinical literature,
- clinical and post-market experience of GPI with implantable devices already placed on the market.

The device is designed to replace the affected anatomical structure, permanently, consistent with the individual clinical factors of the patient and with compliance with surgical and post-operative instructions.



## 16 WARRANTY CLAUSE AGAINST POSSIBLE LIABILITY

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The instructions described above have been validated by GPI SPA as a precise description of the preparation of a medical device for use on a single patient.

It is the responsibility of the operator in charge of the treatment to verify that the treatment itself, carried out using the equipment, materials and personnel available at the appropriate facility, achieves the desired result.

This usually requires validation and cyclical control of the operating procedure.

The cleaning, disinfection and sterilization procedures must be carried out and recorded according to the protocols in force at the facility responsible for the aforementioned operations.

Any deviation by the operator in charge of the treatment with respect to the instructions provided must be evaluated and recorded with regard to effectiveness and potential negative and adverse consequences.

## 17 DISTRIBUTORS

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### **ITALY**

#### **VER SAN & DAFNE M.D. S.R.L.**

Viale Archimede, 25  
I-37059 Campagnola di Zevio (VR)  
T +39 045 569949  
F +39 045 568190  
info@versandafne.it

### **GREECE**

#### **IHSO BIOMEDICAL ENGINEERING SINGLE MEMBER P.C.**

Ippokratous 13-15  
Nea Filotheh Amarousiou  
GR-15123 Marousi  
T +30 6974854420  
info@ihso.gr

## 18 MANUFACTURER

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### **GPI SPA**

Via Ragazzi del '99, 13  
I-38123 Trento (TN)  
T +39 0461 381515  
info@gpi.it | gpi@pec.gpi.it

EUDAMED code: IT-MF-000020127

Registration No. Database of manufacturers of custom-made medical devices of the Italian Ministry of Health: ITCA01050530