

# Temporary Abutments and Copings



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## Description

Temporary abutments and copings are premanufactured dental implant abutments which can be connected to an endosseous dental implant or dental implant abutment to support the placement of a temporary dental prosthesis.

An assortment of temporary abutments and copings are available for use with various Nobel Biocare implant systems.

### Temporary Snap Abutments Engaging

- Temporary Snap Abutments Engaging Conical Connection are available in NP/RP/WP platforms, feature a conical connection and can be used with Nobel Biocare's NobelActive®, NobelParallel™ CC and/or NobelReplace® CC implant systems.

### Temporary Abutments Engaging

- Temporary Abutments Engaging Conical Connection are available in 3.0/NP/RP/WP platforms, feature a conical connection and can be used with Nobel Biocare's NobelActive®, NobelParallel™ CC and/or NobelReplace® CC implant systems.
- Temporary Abutments Nobel Biocare N1™ TCC are available in NP/RP platforms and feature a tri-oval conical connection and can be used with Nobel Biocare's Nobel Biocare N1™ implant system.
- Temporary Abutments Engaging NobelReplace® are available in NP/RP/WP and 6.0 platform, feature an internal tri-channel connection and can be used with Nobel Biocare's NobelReplace®, Replace Select™ and/or NobelSpeedy® Replace™ implant systems.
- Temporary Abutments Engaging Brånemark System® are available in NP/RP/WP platforms, feature an external hex connection and can be used with Nobel Biocare's Brånemark System and/or NobelSpeedy® Groovy implant systems.

### Temporary Abutments Non-Engaging

- Temporary Abutments Non-Engaging Conical Connection are available in NP/RP/WP platforms, feature a conical connection and can be used with Nobel Biocare's NobelActive®, NobelParallel™ CC and/or NobelReplace® CC implant systems.
- Temporary Abutments Non-Engaging NobelReplace® are available in NP/RP/WP and 6.0 platform, feature an internal tri-channel connection and can be used with Nobel Biocare's NobelReplace®, Replace Select™ and/or NobelSpeedy® Replace™ implant systems.
- Temporary Abutments Non-Engaging Brånemark System® are available in NP/RP/WP platforms, feature an external hex connection and can be used with Nobel Biocare's Brånemark System and/or NobelSpeedy® Groovy implant systems.

**Table 1 – Temporary Snap Abutments Engaging and Temporary Abutments Engaging / Non-Engaging – Compatible Implant Platforms, Screwdrivers, and Torque Specifications**

Healing Abutment for	Available Platforms	Engaging	Non-engaging	Color Coding	Available Margin Heights	Tightening Torque	Screwdriver
Conical connection (CC)	3.0	x	–	none	1.5 mm	15 Ncm	Unigrip™
	NP	x	x	●	1.5 mm	35 Ncm	
	RP	x	x	●	3.0 mm		
	WP	x	x	●			
Tri-oval conical connection (TCC)	NP	x	–	● (screw)	1.5 mm	20 Ncm	Omnigrip™ mini
	RP	x	–	● (screw)	3.0 mm		
Tri-channel	NP	x	x	●	1.5 mm	35 Ncm	Unigrip™
	RP	x	x	●			
	WP	x	x	●			
	6.0	x	x	●			
External Hex	NP	x	x	none	1.5 mm	35 Ncm	Unigrip™
	RP	x	x	none			
	WP	x	x	none			

## Temporary Abutment Plastic Engaging, Temporary Abutment Plastic Non-Engaging

- Internal tri-channel connection for: NobelReplace®, Replace Select™ and NobelSpeedy® Replace™.

## Temporary Abutments Anatomical PEEK

- Temporary Abutments Anatomical PEEK Conical Connection are available in WP platform, feature a conical connection and can be used with Nobel Biocare's NobelActive® and/or NobelParallel™ CC implant systems.

## Temporary Copings Multi-unit and Temporary Snap Copings Multi-unit

- Temporary Snap Copings Multi-unit Titanium are available for Nobel Biocare's Multi-unit Abutments which feature conical connection and/or tri-oval conical connection.
- Temporary Coping Multi-unit are available for Nobel Biocare's Multi-unit Abutments which feature external hex connection and/or internal tri-channel connection.

The following tables summarize the implant platforms which are compatible with the various temporary abutments and copings, including the specifications for tightening torque, required screwdrivers, and other key information for each type of temporary abutment and coping, based on their connection type.

**Table 2 – Temporary Abutments Anatomical PEEK – Compatible Implant Platforms, Screwdrivers, and Torque Specifications**

Temporary Abutment Anatomical PEEK for	Available platforms	Color coding	Available sizes	Tightening torque	Screwdriver
Conical connection (CC)	WP	none	6 x 7 mm 7 x 8 mm	35 Ncm	Unigrip™

**Table 3 – Temporary Copings Multi-unit and Temporary Snap Copings Multi-unit – Compatible Abutments, Screwdrivers, and Torque Specifications**

Temporary coping	MUA connection / platform	Color coding	Tightening torque	Screwdriver
Temporary Snap Coping Multi-unit	CC/NP, RP, WP TCC / NP, RP	none	15 Ncm	Unigrip™
Temporary Coping Multi-unit	Tri-channel / NP, RP, WP External Hex / NP, RP			
Temporary Coping Multi-unit Bmk WP	External Hex / WP			

Temporary Abutments Engaging, Temporary Abutments Non-Engaging and Temporary Copings Multi-unit, Temporary Abutments Anatomical PEEK are co-packed with a clinical screw.

Refer to Nobel Biocare Instructions for Use (IFU) IFU1057 for information regarding clinical screws. This IFU is available for download at [ifu.nobelbiocare.com](http://ifu.nobelbiocare.com).

## Intended Use / Intended Purpose

### Temporary Abutments and Copings

Dental implant abutments are intended to be used in the upper or lower jaw and used for supporting tooth replacements to restore chewing function.

### Temporary Abutment Anatomical PEEK

Dental implant abutments are intended to be used in the upper or lower jaw and used for supporting tooth replacements to restore chewing function.

The PEEK Temporary Abutment is a premanufactured prosthetic component directly connected to the endosseous dental implant and is intended for use as an aid in prosthetic rehabilitation. It is indicated for single and multiple unit cement retained temporary restorations.

### Temporary Abutments Nobel Biocare N1™ TCC

Intended to be connected to an endosseous dental implant to support the placement of a temporary dental prosthesis.

## Indications

### Temporary Snap Abutment Engaging

Temporary Abutment Engaging is a premanufactured prosthetic component directly connected to the endosseous dental implant and is intended for use as an aid in prosthetic rehabilitation.

The Temporary Abutments and Copings in combination with endosseous implants are indicated for single unit to multiple units screw retained temporary restorations.

Temporary Abutment Engaging Titanium is indicated for single unit screw-retained temporary restorations.

For Temporary Abutment Titanium and Temporary Coping Titanium no specific time limit applies.

### Temporary Abutments Engaging

Temporary Abutment Engaging is a premanufactured prosthetic component directly connected to the endosseous dental implant and is intended for use as an aid in prosthetic rehabilitation.

The Temporary Abutments and Copings in combination with endosseous implants are indicated for single unit to multiple units screw retained temporary restorations.

Temporary Abutment Engaging Titanium is indicated for single unit screw-retained temporary restorations.

For Temporary Abutment Titanium and Temporary Coping Titanium no specific time limit applies.

Temporary Abutment Engaging Conical Connection 3.0 is indicated for use in the treatment of missing single maxillary lateral incisors or in the mandibular central and lateral incisors.

### Temporary Abutments Non-Engaging

Temporary Abutment Non-Engaging is a premanufactured prosthetic component directly connected to the endosseous dental implant and is intended for use as an aid in prosthetic rehabilitation.

The Temporary Abutments and Copings in combination with endosseous implants are indicated for single unit to multiple units screw retained temporary restorations.

Temporary Abutment Non-Engaging Titanium is indicated for screw-retained multiple temporary restorations, for implants with less than 40° overall divergences to allow path of insertion.

### Temporary Abutment Nobel Biocare N1™ TCC

Temporary Abutments Nobel Biocare N1™ TCC are indicated for use with single unit screw- retained temporary dental prostheses placed on endosseous dental implants in the maxilla and mandible, for up to 180 days.

### Temporary Abutment Anatomical PEEK

The Nobel Biocare anatomical PEEK Temporary Abutments are premanufactured, adjustable prosthetic components directly connected to endosseous dental implants and are intended for temporary use up to 180 days as an aid in prosthetic rehabilitation.

### Temporary Abutment Plastic Engaging, Temporary Abutment Plastic Non-Engaging

Abutment Engaging and Non-Engaging is a premanufactured prosthetic component directly connected to the endosseous dental implant and is intended for use as an aid in prosthetic rehabilitation.

Temporary Abutment Plastic Engaging is indicated for single unit screw-retained temporary restorations.

Temporary Abutment Plastic Non-Engaging is indicated for screw-retained multiple temporary restorations, for implants with less than 40° overall divergences to allow path of insertion.

The use of Temporary Abutments made from plastic is limited to 90 days.

### Temporary Copings Multi-unit and Temporary Snap Copings Multi-unit

The Temporary Abutments and Copings in combination with endosseous implants are indicated for single unit to multiple units screw retained temporary restorations.

Temporary Coping Multi-unit Titanium is indicated for screw retained Multi-unit abutments intended for multiple unit temporary restorations.

For Temporary Abutment Titanium and Temporary Coping Titanium no specific time limit applies.

## Contraindications

It is contraindicated to use temporary abutments and copings in:

- Patients who are medically unfit for an oral surgical procedure.
- Patients in whom adequate sizes, numbers or desirable positions of implants are not reachable to achieve safe support of static and dynamic loads.
- Patients who are allergic or hypersensitive to titanium alloy Ti-6Al-4V (90% titanium, 6% aluminum, 4% vanadium), DLC (Diamond Like Carbon) or PEEK (Polyetheretherketone).

It is contraindicated to use the Temporary Abutment Conical Connection 3.0 in positions other than for lateral incisors in the maxilla or central and or lateral incisors in the mandible.

It is contraindicated to use the Temporary Abutment Conical Connection 3.0 for multiple unit restorations.

## Materials

- Temporary Snap Abutments Engaging, Temporary Abutment Engaging Conical Connection, Temporary Abutments Nobel Biocare N1™ TCC, Temporary Abutments Engaging NobelReplace®, Temporary Abutments Engaging Brånemark System®, Temporary Abutments Non-Engaging Conical Connection, Temporary Abutments Non-Engaging NobelReplace®, Temporary Abutments Non-Engaging Brånemark System®, Temporary Snap Copings Multi-unit, and Temporary Copings Multi-unit: Titanium alloy 90% Ti, 6% Al, 4% V according to ASTM F136 and ISO 5832-3.
- Temporary Abutment Anatomical PEEK, Temporary Abutment Plastic and Temporary Coping Plastic: Polyetheretherketone (PEEK).
- Clinical screw: Titanium alloy 90% Ti, 6% Al, 4% V according to ASTM F136 and ISO 5832-3 with DLC (Diamond Like Carbon) coating.

## Cautions

### General

Close cooperation between surgeon, restorative dentist and dental laboratory technician is essential for a successful implant treatment.

It is strongly recommended that Nobel Biocare surgical instruments and prosthetic components are used only with Nobel Biocare implants, as combining components that are not dimensioned for correct mating can lead to mechanical and/or instrumental failure, damage to tissue or unsatisfactory aesthetic results.

It is especially important to achieve proper stress distribution through adaptation and fitting of the crown or bridge by adjusting occlusion to the opposing jaw. In addition, avoid excessive transverse loading forces, particularly in immediate loading cases.

The use of Temporary Snap Coping Multi-unit Titanium is limited to 180 days.

Temporary Abutments shall be taken out of occlusion and should not be used for full-arch restoration.

### Before Surgery

Pre-operative hard tissue or soft tissue deficits may yield a compromised esthetic result or unfavorable implant angulations.

All components, instruments and tooling used during the clinical and laboratory procedure must be maintained in good condition and care must be taken that instrumentation does not damage implants or other components.

Special attention has to be given to patients who have local or systemic factors that could interfere with the healing process of either bone or soft tissue or the osseointegration process (e.g. cigarette smoking, poor oral hygiene, uncontrolled diabetes, oro-facial radiotherapy, steroid therapy and infections in the neighboring bone). Special caution is advised in patients who receive bisphosphonate therapy.

The device has not been evaluated in pediatric/adolescent patients and is not recommended for use in children. Routine treatment is not recommended for pediatric patients until the end of the jaw bone growth phase has been properly documented.

In general, implant placement and prosthetic design must accommodate individual patient conditions.

In the case of bruxism, other parafunctional habits, or unfavorable jaw relationships, reappraisal of the treatment option or appropriate pre- and post-treatment measures may be considered.

### At Surgery

Because of the small sizes of the devices, care must be taken that they are not swallowed or aspirated by the patient. It is appropriate to use specific supporting tools to prevent aspiration of loose parts (e.g. gauze, a dental dam, or throat shields).

Never exceed the recommended maximum tightening torque for the clinical/prosthetic screw. Overtightening of abutment may lead to a screw fracture.

### After Surgery

To help ensure a successful long term-treatment outcome, it is advised to provide comprehensive regular patient follow up after implant treatment and to inform the patient about appropriate oral hygiene.

## Intended Users and Patient Groups

Temporary abutments and copings are to be used by dental health care professionals.

Temporary abutments and copings are to be used in patients subject to dental implant treatment.

## Clinical Benefits and Undesirable Side Effects

### Clinical Benefits Associated with Temporary abutments and copings

Temporary abutments and copings a component of treatment with a dental implant system and/or dental crowns and bridges.

As a clinical benefit of treatment, patients can expect to have their missing teeth replaced and/or crowns restored.

### Undesirable Side Effects Associated with Temporary abutments and copings

The placement of these devices is part of an invasive treatment which may be associated with typical side effects such as inflammation, infection, bleeding, hematoma, pain, and swelling. During abutment placement or removal, the pharyngeal reflex (gag reflex) may be triggered in patients with a sensitive gag reflex.

Temporary abutments and copings are part of a multi-component system that replaces teeth and as a result, the implant recipient may experience side effects similar to those associated with teeth, such as retained cement, calculus, mucositis, ulcers, soft tissue hyperplasia, soft and/or hard tissue recessions. Some patients may experience discoloration in the mucosal area such as graying.

#### Notice regarding serious incidents

For a patient/user/third party in the European Union and in countries with an identical regulatory regime (Regulation 2017/745/EU on Medical Devices); if, during the use of this device or as a result of its use, a serious incident has occurred, please report it to the manufacturer and to your national authority. The contact information for the manufacturer of this device to report a serious incident is as follows:

Nobel Biocare AB  
<https://www.nobelbiocare.com/complaint-form>

## Handling Procedure

### Handling Procedure for Temporary Snap Abutments Engaging and Temporary Abutments Engaging/Non-Engaging

1. Connect the Temporary Abutment to the implant using the appropriate screwdriver according to Table 1 and check the post height. Modify the abutment, if necessary, outside of the patient's mouth. Do not modify the abutment seating area.

**Note** Until the Temporary Snap Coping Multi-unit Titanium is secured with the Prosthetic Screw, care should be exercised that the Temporary Snap Coping Multi-unit does not detach from the Multi-unit Abutment Plus (e.g. through pressure from the tongue).

**Note** Temporary abutments should only be exposed to limited occlusal forces by taking the temporary restoration out of the occlusion.

2. After modifying the abutment, it must be cleaned and sterilized prior to further intraoral use, following the instructions in the Cleaning and Sterilization Instructions section.
3. Re-connect the abutment to the implant using the clinical screw and block the screw access hole. For temporary snap abutments, use the snap feature to engage the abutment into the implant.
4. Make a temporary restoration using a pre-fabricated mold with a suitable temporary restoration material, following the instructions by the material manufacturer.
5. For temporary snap abutments: remove the temporary restoration by pulling the crown. Connect the abutment with the restoration to the dedicated protection analog and use the apical drill to create the screw access hole. For temporary abutments without snap feature: drill a hole through the mold, loosen the screw(s) using a dedicated screwdriver and remove the restoration.

6. Make final adjustments to the restoration. Protect the abutment connection while making adjustments using dedicated instruments.
7. Connect the temporary restoration to the implant using the clinical screw and appropriate screwdriver according to Table 1.  
Refer to Nobel Biocare Instructions for Use (IFU) IFU1085 for information regarding the screwdrivers.
8. Tighten the restoration to the required torque according to Table 1, using the appropriate screwdriver and Manual Torque Wrench Prosthetic. Refer to Nobel Biocare Instructions for Use (IFU) IFU1098 for information regarding the Manual Torque Wrench Prosthetic.

It is recommended to verify the final seating using radiographic imaging.

**Caution** Never exceed the recommended maximum tightening torque for the abutment screw. Overtightening of the abutment may lead to a screw fracture.

**Caution** For Conical Connection 3.0; Never exceed 15 Ncm prosthetic tightening torque for the abutment screw. Over tightening of abutment may lead to a screw fracture.

9. Block the screw access hole using suitable material, before closing it with composite.
10. If removal of the temporary restoration is needed, open the screw access and untighten the screw using the appropriate screwdriver.
11. If the abutment cannot be removed, use the Abutment Retrieval Tool. Refer to Nobel Biocare Instructions for Use (IFU) IFU1041 for information regarding Abutment Retrieval Tool.

**Note** For processing of the temporary restoration in the dental laboratory, a dedicated laboratory screw should be used.

### Handling Procedure for Temporary/Snap Copings Multi-unit

1. Connect the Temporary/Snap coping to the Multi-unit Abutment and modify it if necessary, using copious irrigation.

**Note** Until the Temporary/Snap Coping is secured with the Prosthetic Screw, care should be exercised that it does not detach from the Multi-unit Abutment (e.g. through pressure from the tongue).

2. Close the screw access hole.
3. Make a temporary restoration using a pre-fabricated mold with suitable temporary crown and bridge material.
4. Drill a hole through the mold, loosen the screw(s) using Unigrip™ Screwdriver and remove the restoration.
5. Make final adjustments.
6. Connect and tighten the temporary restoration to 15 Ncm using a Unigrip™ Screwdriver and Manual Torque Wrench prosthetic. Refer to Nobel Biocare IFU1098 for information regarding the torque wrench.

**Note** If the restoration on Temporary Snap Copings Multi-unit Abutment is cemented, temporary cement should be used.

### Handling procedure Temporary Abutment Anatomical PEEK

1. Connect the temporary abutment to the implant and check the post height. Modify the abutment if necessary, outside of the patient mouth.

**Note** Temporary abutments should only be exposed to limited occlusal forces by taking the temporary restoration out of the occlusion.

2. After modifying the abutment, it must be cleaned and sterilized prior to further intraoral use, following the instructions in the Cleaning and Sterilization Instructions section.
3. Cut a small axial flat or groove into the provisional abutment to assist in correct location during cementation.
4. Fabricate a provisional crown/bridge in conventional manner.
5. Contour margins and polish modified area.
6. Tighten the PEEK Temporary Abutment to 35 Ncm using Unigrip™ Screwdriver and Manual Torque Wrench Prosthetic. Refer to Nobel Biocare IFU1085 for information regarding the screwdrivers. Refer to Nobel Biocare IFU1098 for information regarding the torque wrench.
7. Cement temporary crown/bridge onto the abutment.
8. Remove excess cement.

### Laboratory procedure (laboratory made provisionals)

Laboratory receives an implant or abutment level impression from the clinician.

1. Assemble the impression coping and implant or abutment replica and carefully reposition into the impression.
2. Fabricate a working model with removable gingival material.

Follow step 1–5 from the “Clinical procedure (chair-side made provisionals)” to fabricate a single or multiple unit provisional restoration.

### Additional laboratory use (NobelProcera® restoration)

The Temporary Abutment and Temporary Coping can also be used as a component onto which the dental technician applies wax/pattern resin material to fabricate a diagnostic representation of the framework which he/she desires to receive back as a NobelProcera® CAD/ CAM product. To obtain this NobelProcera® CAD/CAM restoration, place this wax-up framework into the NobelProcera® or an approved scanner and follow the CAD system software tutorial.

1. Use Temporary Abutment Engaging for NobelProcera® CAD/CAM abutment fabrication.
2. Use Temporary Abutment Non-Engaging or Temporary Coping – for NobelProcera® CAD/CAM implant bridge fabrication.

## Sterility and Reusability Information

Temporary Abutments Nobel Biocare N1™ TCC and Temporary Abutments Anatomical PEEK have been sterilized using irradiation and are intended for single use only. Do not use after the labeled expiration date.

Temporary Snap Abutments Engaging Conical Connection, Temporary Abutment Engaging Conical Connection, Temporary Abutments Engaging NobelReplace®, Temporary Abutments Engaging Brånemark System®, Temporary Abutments Non-Engaging Conical Connection, Temporary Abutments Non-Engaging NobelReplace®, Temporary Abutment Plastic, Temporary Coping plastic, Temporary Abutments Non-Engaging Brånemark System®, Temporary Snap Copings Multi-unit, and Temporary Coping Multi-unit are delivered non-sterile for single use only. Prior to use clean and sterilize the product following the manual or automated procedure in the Cleaning and Sterilization Instructions.

**Warning** Do not use device if the packaging has been damaged or previously opened as the device sterility and/or integrity may be compromised.

**Warning** Use of non-sterile device may lead to infection of tissues or infectious diseases.

**Caution** Temporary abutments Nobel Biocare N1™ TCC and Temporary Abutments Anatomical PEEK are single use products and must not be reprocessed. Reprocessing could cause loss of mechanical, chemical and/or biological characteristics. Reuse could cause local or systemic infection.

**Note** Temporary Snap Abutments Engaging Conical Connection, Temporary Abutment Engaging Conical Connection, Temporary Abutments Nobel Biocare N1™ TCC, Temporary Abutments Engaging NobelReplace®, Temporary Abutments Engaging Brånemark System®, Temporary Abutments Non-Engaging Conical Connection, Temporary Abutment Plastic, Temporary Coping plastic, Temporary Abutments Non-Engaging NobelReplace®, and Temporary Abutments Non-Engaging Brånemark System® and Temporary Abutments Anatomical PEEK Conical Connection must be cleaned and sterilized after performing any modifications to the abutment as described in the Handling Procedure.

## Cleaning and Sterilization Instructions

Temporary Snap Abutments Engaging Conical Connection, Temporary Abutment Engaging Conical Connection, Temporary Abutments Engaging NobelReplace®, Temporary Abutments Engaging Brånemark System®, Temporary Abutments Non-Engaging Conical Connection, Temporary Abutments Non-Engaging NobelReplace®, Temporary Abutment Plastic, Temporary Coping plastic, Temporary Abutments Non-Engaging Brånemark System®, Temporary Snap Coping Multi-unit and temporary Coping Multi-unit, Temporary Abutments Anatomical PEEK Conical Connection are delivered non-sterile by Nobel Biocare and are intended for single use. Prior to use, the devices must be cleaned and sterilized by the user.

Additionally, if any temporary abutment or coping is modified after initial cleaning and sterilization, the device must be cleaned and sterilized again prior to intraoral use.

Temporary Abutments Nobel Biocare N1™ TCC and Temporary Abutments Anatomical PEEK are delivered sterile but if modified during Handling Procedure, must be cleaned and sterilized by the user.

The devices can be cleaned manually, or in an automatic washer. Each device must then be individually sealed in a sterilization pouch and sterilized.

The following cleaning and sterilization processes have been validated according to international standards and guidelines as applicable:

- Manual and Automated Cleaning: AAMI TIR 12.
- Sterilization: AAMI ST79 and ISO 17665-1.

According to EN ISO 17664, it is the responsibility of the user/processor to ensure that the processing/reprocessing is performed using equipment, materials and personnel which are suitable to ensure the effectiveness of the processes. Any deviation from the following instructions should be validated by the user/processor to ensure the effectiveness of the process.

**Note** The manufacturer's instructions for use for any detergent/cleaning solution and/or equipment and accessories used to clean and/or dry the device(s) must be strictly followed where applicable.

**Note** The Temporary abutments and copings have been validated to withstand these cleaning and sterilization procedures.

### Automated Cleaning and Drying (Including Pre-cleaning)

#### Pre-cleaning

1. Disassemble the screw from the abutment.
2. Immerse the device in 0.5% lukewarm enzymatic cleaning agent (e.g. Neodisher Medizym) for a minimum of 5 minutes.
3. Fill lumina (where applicable) with 0.5% lukewarm enzymatic cleaning agent (e.g. Neodisher Medizym) using a 20 ml syringe.
4. Brush the outer surfaces with a soft bristled nylon brush (e.g. Medsafe MED-100.33) for a minimum of 20 seconds until all visible soil is removed.
5. Brush the inner surfaces, lumina and cavities (where applicable) with an appropriately sized bottle brush (e.g. 1.2 mm/2.0 mm/5.0 mm diameter) for a minimum of 20 seconds until all visible soil is removed.
6. Thoroughly rinse all outer and inner surfaces, lumina and cavities (where applicable) with cold running tap water for a minimum of 10 seconds to remove all cleaning solution.
7. Rinse lumina (where applicable) with 20 ml tap water using a 20 ml syringe.

#### Automated Cleaning and Drying

The following washer was used in the Nobel Biocare validation: Miele G7836 CD with the Vario TD program.

**Note** It is recommended to perform the automated cleaning and drying with a maximum load of 11 individual devices.

1. Place the devices in a suitable rack or load carrier (e.g. metal sieve basket).
2. Load the devices into the washer. Ensure the rack or load carrier is oriented in a horizontal position.
3. Perform automatic cleaning. The following parameters are based on the Vario TD program on the Miele G7836 CD washer:
  - Minimum 2 minutes pre-cleaning with cold tap water.
  - Draining.
  - Minimum 5 minutes cleaning with minimum 55°C (131°F) tap water and 0.5% mildly alkaline detergent (e.g. Neodisher Mediclean).
  - Draining.
  - Minimum 3 minutes neutralization with cold desalinated water.
  - Draining.
  - Minimum 2 minutes rinsing with cold desalinated water.
  - Draining.
4. Run drying cycle at minimum 50°C (122°F) for a minimum of 10 minutes.
5. Dry with compressed air or clean and lint-free single use wipes, if any residual moisture remains after the drying cycle.

#### Visual Inspection

After cleaning and drying, inspect the device for unacceptable deterioration such as corrosion, discoloration, pitting, or cracked seals and properly discard any devices that fail the inspection.

## Manual Cleaning and Drying

1. Disassemble the screw from the abutment.
2. Immerse device for a minimum of 5 minutes in a sterile 0.9% NaCl solution.
3. Scrub the outer surfaces of the device with soft-bristled nylon brush for a minimum of 20 seconds until all visible soil is removed.
4. Flush the inner surfaces, lumina and cavities (where applicable) with 20 ml lukewarm enzymatic cleaning solution (e.g. Cidezyme ASP; maximum 45°C (113°F)) using an irrigation needle connected to a 20 ml syringe.
5. Brush the inner surfaces, lumina and cavities (where applicable) with appropriately sized bottle brush (e.g. 1.2 mm/2.0 mm/5.0 mm diameter) for a minimum of 10 seconds until all visible soil is removed.
6. Thoroughly rinse the outer surfaces and lumina of the device with cold running tap water for a minimum of 10 seconds to remove all cleaning solution.
7. Immerse the device in an ultrasonic bath (e.g. Bandelin; frequency 35 kHz; effective ultrasonic power 300 W<sub>eff</sub> containing 0.5% enzymatic cleaning agent (e.g. Cidezyme ASP) and treat for a minimum of 5 minutes at minimum 40°C (104°F)/maximum 45°C (113°F).
8. Flush the inner surfaces, lumina and cavities (where applicable) with 20 ml lukewarm tap water using an irrigation needle connected to a 20 ml syringe.
9. Thoroughly rinse the outer surfaces of the device with purified or sterile water for a minimum of 10 seconds to remove all cleaning agent.
10. Dry with compressed air or clean and lint-free single use wipes.

### Visual Inspection

After cleaning and drying, inspect the device for unacceptable deterioration such as corrosion, discoloration, pitting, cracked seals and properly dispose any devices that fail the inspection.

## Sterilization

The following steam sterilizers were used in the Nobel Biocare validation: Systec HX-320 (pre-vacuum cycle); Amsco Century Sterilizer (gravity cycle).

**Note** It is recommended to perform sterilization with a maximum load of 11 devices individually sealed in sterilization pouches.

1. Seal each device in a suitable sterilization pouch. The sterilization pouch should fulfill the following requirements:
  - EN ISO 11607 and/or DIN 58953-7.
  - Suitable for steam sterilization (temperature resistance up to at least 137°C (279°F), sufficient steam permeability).
  - Sufficient protection of the instruments as well as of the sterilization packaging to mechanical damage.

Table 4 presents examples of suitable sterilization pouches.

Table 4 – Recommended Sterilization Pouches

Method	Recommended Sterilization Pouch
Gravity Cycle	SPSmedical Self-Seal sterilization pouch
Pre-vacuum Cycle	SteriCLIN® pouch

2. Label the sterilization pouch with information necessary to identify the device (for example, the product name with article number and lot/batch number (if applicable)).
3. Place the sealed sterilization pouch into the autoclave/sterilizer. Ensure that the sterilization pouch is oriented in a horizontal position.
4. Sterilize the device. Both the gravity displacement cycle and pre-vacuum (top dynamic air removal) cycle can be applied, using the following recommended parameters (Table 5):

Table 5 – Recommended Sterilization Cycles

Cycle	Minimum Temperature	Minimum Sterilization Time	Minimum Drying Time (In Chamber)	Minimum Pressure
Gravity Cycle <sup>1</sup>	132°C (270°F)	15 minutes	20 minutes	≥2868.2 mbar <sup>4</sup>
Pre-Vacuum Cycle <sup>1</sup>	132°C (270°F)	4 minutes		
Pre-Vacuum Cycle <sup>2</sup>	134°C (273°F)	3 minutes		≥3042 mbar <sup>5</sup>
Pre-Vacuum Cycle <sup>3</sup>	134°C (273°F)	18 minutes		

<sup>1</sup> Validated sterilization processes to achieve a Sterility Assurance Level (SAL) of 10<sup>-6</sup> in accordance to EN ISO 17665-1.

<sup>2</sup> Recommendation of the Welsh Health Technical Memorandum (WHTM) 01-01 Part C.

<sup>3</sup> Recommendation of the World Health Organization (WHO) for steam sterilization of instruments with potential TSE/CJD contamination. Ensure that the packaging and monitoring systems (chemical/biological indicators) used for this cycle are validated for these conditions.

<sup>4</sup> Saturated steam pressure at 132°C as per required by EN ISO 17665-2.

<sup>5</sup> Saturated steam pressure at 134°C as per required by EN ISO 17665-2.

**Note** Autoclave/sterilizer design and performance can affect the efficacy of the sterilization process. Healthcare facilities should therefore validate the processes that they use, employing the actual equipment and operators that routinely process the devices. All autoclaves/sterilizers should comply with the requirements of, and be validated, maintained and checked in accordance to SN EN 13060, EN 285, EN ISO 17665-1, and/or AAMI ST79, or to the applicable national standard. The autoclave/sterilizer manufacturer's instructions for use must be strictly followed.

## Storage and Maintenance

After sterilization, place the labeled and sealed sterilization pouch in a dry and dark place. Follow the instructions provided by the manufacturer of the sterilization pouch regarding the storage conditions and expiration date of the sterilized device.

## Containment and Transportation/Shipping to Point of Use

The container and/or outer packaging used to transport or ship the processed device back to the point of use must be suitable to protect and safeguard the sterility of the devices during transportation, taking the device packaging and the required transportation or shipping process (intrafacility transportation or shipping to an external site) into account.

# Magnetic Resonance (MR) Safety Information

## Temporary Abutments Conical Connection, NobelReplace®, Brånemark System® and Copings

Temporary abutments CC, NobelReplace®, Brånemark System® and copings which contain metallic materials can be affected by MRI scanning. Non-clinical testing performed by Nobel Biocare has demonstrated that these temporary abutments and copings are unlikely to impact patient safety under the following MRI conditions:

- Static magnetic field of 1.5 Tesla and 3.0 Tesla only.

- Maximum spatial gradient magnetic field of 4000 Gauss/cm (40 T/m).
- Maximum MR system reported, whole body averaged specific absorption rate (SAR) of 2 W/kg (Normal Operating Mode) or 4 W/kg (First Level Controlled Mode).

**Note** Removable restorations should be taken out prior to scanning, as is done for watches, jewelry etc.

Under the conditions defined above, these devices are expected to produce a maximum temperature rise of 4.1°C (39.4°F) after 15 minutes of continuous scanning.

In the non-clinical testing, the image artifact caused by the devices extends approximately 30 mm from the device when imaged with a gradient echo pulse sequence and a 3.0 Tesla MRI system.

**Note** Although the non-clinical testing demonstrates that the metallic temporary abutments and copings are unlikely to interfere with patient safety under the conditions defined above, this testing is insufficient to support a claim of MR Safe or MR Conditional for these products.

## Temporary Abutment Nobel Biocare N1™ TCC

### MR Safety Information for Single Tooth Restoration

MRI Safety Information



Non-clinical testing has demonstrated that Temporary Abutments Nobel Biocare N1™ TCC are MR conditional. A patient with this device can be safely scanned in an MR system meeting the following conditions mentioned here below. Failure to follow these conditions may result in injury to the patient.

Nominal value(s) of Static Magnetic Field [T]	1.5-Tesla (1.5 T)	3-Tesla (3 T)
Maximum Spatial Field Gradient [T/m and gauss/cm]	Maximum spatial field gradient of 58.9 T/m (5,890 G/cm).	
RF Excitation	Circularly Polarized (CP)	
RF Transmit Coil Type	Whole body transmit coil	
Maximum Whole-Body SAR [W/kg]	Inferior to the neck: 2.0 W/kg Superior to the neck: 0.5 W/kg	Inferior to the xyphoid: 2.0 W/kg Between the xyphoid and neck: 1.0 W/kg Superior to the neck: 0.5 W/kg
Limits on Scan Duration	Under the scan conditions defined above, the dental implant systems are expected to produce a maximum temperature rise less than 6.0 °C after 15 minutes of continuous scanning.	
MR Image Artifact	In non-clinical testing, the image artifact caused by the dental implant systems extend radially approximately 3.0 cm from the devices or device assemblies when imaged in a 3T MRI system.	

## Performance Requirements and Limitations

To achieve the desired performance, temporary abutments must only be used with the products described in this Instructions for Use and/or in the Instructions for Use for other compatible Nobel Biocare products, and in accordance with the Intended Use for each product. To confirm the compatibility of products which are intended to be used in conjunction with temporary abutments, check the color coding, dimensions, lengths, connection type and/or any direct marking as applicable on the products or product labeling.

## Facilities and Training

It is strongly recommended that new and experienced users of Nobel Biocare products always go through special training before using a new product for the first time. Nobel Biocare offers a wide range of courses for various levels of knowledge and experience. For more information please visit [www.nobelbiocare.com](http://www.nobelbiocare.com).

## Storage, Handling and Transportation

The device must be stored and transported in dry conditions in the original packaging at room temperature and not exposed to direct sunlight. Incorrect storage and transportation may influence device characteristics leading to failure.

## Disposal

Safely discard potentially contaminated or no longer usable medical devices as healthcare (clinical) waste in accordance with local healthcare guidelines, country and government legislation or policy.

Separation, re-cycling or disposal of packaging material shall follow local country and government legislation on packaging and packaging waste, where applicable.

# Manufacturer and Distributor Information

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## Manufacturer



Nobel Biocare AB  
PO Box 5190, 402 26  
Västra Hamngatan 1  
Göteborg  
411 17  
Sweden  
[www.nobelbiocare.com](http://www.nobelbiocare.com)

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CE Mark for Class IIb Devices



**Note** Regarding Canadian Device Licensure, not all products described in the IFU may have a device licence according to Canadian Law.

## Legal Statements

EN All rights reserved.

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# Symbols Glossary

The following symbols may be present on the device labeling or in information accompanying the device. Refer to the device labeling or accompanying information for the applicable symbols.



Authorized Representative in the European Community / European Union



UK Responsible Person



Authorised Representative in Switzerland



Sterilized using Ethylene Oxide



Sterilized using irradiation



Sterilized using steam or dry heat



Batch code



Catalogue number



Unique Device Identifier



Serial number



Medical device



Magnetic resonance safe



Caution



Magnetic resonance conditional



Non-sterile



Contains hazardous substances



Contains or presence of DEHP phthalate



Contains or presence of natural rubber latex



Contains or presence of phthalate



Contains biological material of animal origin



CE mark



CE mark with Notified Body number



UKCA mark



UKCA mark with Approved Body number



Consult instructions for use



For prescription use only



[symbol.glossary.nobelbiocare.com](https://symbol.glossary.nobelbiocare.com)  
[ifu.nobelbiocare.com](https://ifu.nobelbiocare.com)

Link to Online Symbols Glossary and IFU Portal



Date of manufacture



Manufacturer



Use-by date



Upper limit of temperature



Temperature limit



Do not re-sterilize



Do not re-use



Non-pyrogenic



Date



Tooth number



Patient number



Patient identification



Health care centre or doctor



Patient information website



EU Importer



Swiss Importer



Double sterile barrier system



Single sterile barrier system



Single sterile barrier system with protective packaging inside



Single sterile barrier system with protective packaging outside



Do not use if package is damaged and consult instructions for use



Keep away from sunlight



Keep dry