

Reprocessing instructions for RatioPlant® products - Status 2019.12 -

A. Cleaning agent

The use of neodisher® MediClean forte from HumanTech Dental GmbH is prescribed. Treatment with alkaline agents must be followed by a neutralising agent and thorough rinsing. The cleaning agent manufacturer's instructions for use must be followed. Where appropriate, multi-component instruments should be disassembled for proper cleaning. For manual and/ or machine cleaning procedures, the instruments must be taken from the supplied metal or polymer basket. Instrument baskets, containers and covers have to be cleaned separately from the instruments.

B. Instructions for manual cleaning

- Immerse the products completely in the cleaning agent (0.5% (v/v) neodisher® MediClean forte dissolved in demineralized water at a temperature of 30 ± 2 °C) until no air bubbles appear and then soak for 10 minutes. Clean carefully the products with a non-metallic brush with soft bristles (medium-hard toothbrush) until no residues are visible in the cleaning medium. Particular care must be taken when cleaning cavities and other hard-to-reach areas. Hard-to-reach openings have to be cleaned using a long, narrow nylon brush with soft bristles.

Note: The use of an ultrasonic cleaner at 35 kHz promotes thorough cleaning.

- Remove the products from the solution and rinse them with demineralized water at room temperature for at least 1 minute. Thoroughly rinse lumens, blind holes and other hard-to-reach areas.

Note: Hard-to-reach areas or mated surfaces can be better rinsed with a syringe or water jet.

- Put the prepared cleaning agent into an ultrasonic cleaner. Immerse the products completely in the cleaning solution for 10 minutes and clean with ultrasound at 35 kHz at a temperature of 25 ° to 30 °C.
- Rinse the products with demineralized water at room temperature for 3 minutes.

C. Instructions for manual disinfection

- Immerse the products in a disinfectant solution (3.0% (v/v) neodisher® Septo Fin prepared in demineralized water) until no air bubbles appear and then soak at 20 ± 2 °C for 15 minutes.
- Immerse the products in cold demineralized water for at least 1 minute and then rinse sufficiently.
- Sufficient drying must be ensured.

D. Instructions for combined manual/machine cleaning and disinfection

D.1 Manual pre-cleaning

- Completely immerse the products in the cleaning agent (0.5% (v/v) neodisher® MediClean forte, prepared in demineralized water at a temperature of 30 ± 2 °C) until no air bubbles appear and then soak for 10 minutes. Clean carefully the products with a non-metallic brush with soft bristles (medium-hard toothbrush) until no residues are visible in the cleaning medium. Particular care must be taken when cleaning cavities and other hard-to-reach areas. Hard-to-reach openings should be cleaned using a long, narrow nylon brush with soft bristles.

Note: The use of an ultrasonic cleaner at 35 kHz promotes thorough cleaning.

- Remove the products from the solution and rinse them with demineralized water at room temperature for at least 1 minute. Thoroughly rinse lumens, blind holes and other hard-to-reach areas.

Note: Hard-to-reach areas or mated surfaces can be better rinsed with a syringe or water jet.

D.2 Machine cleaning and thermal disinfection

- Place the products horizontally in a suitable basket of the washer/disinfection machine and run through a program of the washer/disinfection machine. Disinfection must be performed at 90 °C for 5 minutes using demineralized water. Further information of the process flow are mentioned in the following table:

Process flow of a washer/disinfection cycle

Step	Description
1	Rinse with cold water for 1 minute
2	5 minutes cleaning with cleaning medium (0.5% (v / v) neodisher® MediClean forte at 55 °C)
3	Neutralize for 20 seconds (0.1% neodisher® Z) with cold water
4	Neutralize for 40 seconds (0.1% neodisher® Z) with warm water
5	Rinse with cold water for 20 seconds
6	Rinse with warm water for 40 seconds
7	5 minutes of thermal disinfection at 90 °C (A0> 3000) with demineralized water
Note: The instructions of the cleaning and disinfection device manufacturer should be followed exactly.	

- Sufficient drying must be ensured.

E. Care/ Testing

- Still contaminated products must be cleaned and disinfected again.
- Cool the products to room temperature.
- Check the ratchet and joint instruments for easy movement and carry out maintenance if necessary (see instruction manual 5014030110-1).
- Testing the products after conditioning for cleanliness, corrosion, wear, function and damage, e.g. bent, broken, cracked, worn and broken off parts.
- The drills must be checked after each use for any blunt cutting or damage and replaced if necessary.
- Damaged and defective products should be sorted out and replaced.
- Check that the silicone lugs and instrument holders are intact and in their proper position.

F. Sterilization


Non-sterile delivered RatioPlant® products must be sterilized or re-sterilized in an autoclave using a validated steam sterilization process. Instrument sets should be properly prepared and packaged in baskets and/ or containers that the steam come into contact with all surfaces and can spread and penetrate all products. The use of flash sterilization is not recommended. The minimum recommended sterilization parameters are as follows:

Sterilization medium	Sterilization procedure	Sterilization temperature	Duration	Drying time
Steam	Fractionated Pre-vacuum	132°C – 134°C	5 Minutes	10 Minutes
Steam	Fractionated Pre-vacuum	121°C	30 Minutes	10 Minutes

Exception: Plastic parts for taking impressions, including bites, do not have to be sterilized.

G. Further general information on the cleaning and sterilization of RatioPlant® products made of titanium or titanium alloys

It is recommended to strictly separate implants made of titanium and titanium alloys from surgical instruments, for example, when cleaning and disinfecting. It is imperative to ensure that implants made of titanium or titanium alloys do not come into contact with blood, serum or other human tissue during the reprocessing and disinfection cycle.

 <p>HumanTech Dental GmbH Gewerbestraße 5 D-71144 Steinenbronn Tel: +49 (0) 7157/5246-71 Fax: +49 (0) 7157/5246-66 e-mail: info@humantech-dental.de www.humantech-dental.de</p>	
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