

Reprocessing instructions for RatioPlant® products– Status 2019.05

A. Cleaning agent

Weakly alkaline cleaning agents with a pH value < 11 are preferable and recommended by HumanTech Dental GmbH (e.g. neodisher® MediClean forte). 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

- Completely immerse the products in the cleaning agent (e.g. 0.5% (v/v) neodisher® MediClean forte, prepared in demineralized water) until no air bubbles appear and then soak for 10 minutes. Carefully clean the product in the cleaning agent using a nylon brush with soft bristles. 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 45-50 kHz promotes thorough cleaning.

- Remove the products from the solution and rinse with clean water 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 prepared cleaning agent into an ultrasonic cleaner. Completely immerse the product in the cleaning solution for 10 minutes and clean using ultrasound at 45-50 kHz with a temperature between 30°C and 40°C.
- Rinse products with clean water for at least 3 minutes.

C. Instructions for manual disinfection

- Immerse the product in a disinfectant solution of e.g. 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.
- Rinse products with clean water for at least 3 minutes and ensure that they are sufficient dry.

D. Instructions for combined manual/machine cleaning and disinfection

- Completely immerse the products in the cleaning agent until no air bubbles appear and then soak for 10 minutes. Carefully clean the products using a nylon brush with soft bristles. 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 (e.g. pipe cleaner).

Note: The use of an ultrasonic cleaner at 45-50 kHz promotes thorough cleaning.

- Remove the products from the solution and rinse with clean water 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 products into a suitable basket in the washer/disinfection machine and run a standard cycle. Disinfection must be performed at 90°C for 5 minutes using demineralised water.
- The washer/disinfection machine manufacturer's instructions should be strictly followed.
- 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

RatioPlant products which are intended for use in a sterile condition have to be sterilized or re-sterilized in autoclaves using a validated steam sterilisation 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. Refer to the autoclave manufacturer's instructions to determine the correct sterilisation temperature and cycle time. The sterilisation must be performed using steam in accordance with the provisions of EN ISO 17665-1. The use of flash sterilisation is not recommended. The minimum recommended sterilisation parameters are as follows:

Steam	Pre-vacuum	132-134 °C	5 minutes
Steam	Pre-vacuum	121 °C	30 minutes

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

 <p>HumanTech Dental GmbH Gewerbstraße 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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