

These instructions for use are a supplement to the manual of the centrifuge and do not replace it. Please read the operating manual of the centrifuge before putting the centrifuge into operation for the first time or after replacing the seals of the centrifuge. The current version of the manual can be found on the Internet under www.starlabgroup.com.

- i** The aerosol-tightness of rotor and rotor lids has been tested and certified by the "Centre for Emergency Preparedness and Response, Health Protection Agency, Porton Down (UK)" in accordance with Annex AA of IEC 1010-2-020/IEC 61010-2-020. The certificates can be found in the corresponding operating manuals.

1 Safety notes



DANGER! Electric shock due to the ingress of liquid.

- ▶ Switch off the centrifuge and disconnect it from the mains/power line before starting cleaning or disinfection.
- ▶ Do not allow any liquids to penetrate the inside of the housing.
- ▶ Do not perform a spray clean/spray disinfection on the housing.
- ▶ Only reconnect the centrifuge to the mains/power line when it is completely dry, both inside and outside.



WARNING! Risk of injury from improperly attached rotors and rotor lids.

- ▶ Only centrifuge with the rotor and rotor lid firmly tightened.
- ▶ If unusual noises occur when the centrifuge starts, the rotor or rotor lid may not be attached properly. Immediately stop the centrifugation.



WARNING! Risk of injury from chemically or mechanically damaged accessories.

Even minor scratches and cracks can lead to severe internal material damage.

- ▶ Protect all accessory parts from mechanical damage.
- ▶ Inspect the accessories for damage before each use. Replace any damaged accessories.
- ▶ Do not use accessories that have exceeded their maximum service life.



CAUTION! Risk of injury due to asymmetric loading of a rotor.

- ▶ Load rotors symmetrically with identical tubes.
- ▶ Only load adapters with suitable tubes.
- ▶ Always use the same type of tubes (weight, material/density and volume). Always observe the max. *g-force* of the tubes indicated by the manufacturer.
- ▶ Check symmetric loading by balancing the adapters and tubes used with a balance.



CAUTION! Risk of injury from overloaded rotor.

The centrifuge is designed for the centrifugation of material with a maximum density of 1.2 g/ml at maximum speed and filling volume and/or load.

- ▶ Do not exceed the maximum load of the rotor.



WARNING! Damage to health due to limited aerosol-tightness if used incorrectly.

Mechanical strain and contamination by chemicals or other aggressive solvents may impair the aerosol-tightness of the rotors and rotor lids. Autoclaving at excessive temperatures can lead to vessels, adapters and rotor lids becoming brittle and deformed.

- ▶ Check the integrity of the seal of the aerosol-tight rotor lid before each use.
- ▶ Only use aerosol-tight rotor lids with undamaged and clean seals.
- ▶ Do not exceed temperatures of 121°C or a time of more than 20 min. while autoclaving.
- ▶ Lightly grease the threads of the rotor lid screw with pivot grease after every proper autoclaving process (121 °C, 20 min.).
- ▶ **Never** store aerosol-tight rotors or buckets closed.



WARNING! Damage to health due to limited aerosol tightness with an incorrect rotor/rotor lid combination.

Aerosol-tight centrifugation is guaranteed only if the rotors and rotor lids intended for this purpose are used. Aerosol-tight fixed-angle rotors are labeled with **AT** at the end of their product name.

- ▶ Always use both rotors and rotor lids that have been labeled as aerosol-tight for aerosol-tight centrifugation. Information on which centrifuges can use aerosol-tight rotors and rotor lids can be found on the rotor and on the top side of the rotor lid.
- ▶ Only use aerosol-tight rotor lids in combination with the rotors indicated on the rotor lid.



NOTICE! Damage to rotors from aggressive chemicals.

Rotors are high-quality assemblies which can withstand extreme stresses. This stability can be impaired by aggressive chemicals.

- ▶ Avoid using aggressive chemicals such as strong and weak alkalis, strong acids, solutions with mercury ions, copper ions and other heavy metal ions, halogenated hydrocarbons, concentrated saline solutions and phenol.
- ▶ If it is contaminated by aggressive chemicals, clean the rotor and especially the rotor bores immediately using a neutral cleaning agent.

Instructions for use - Rotors Standard 24 AT

English (EN)

2 Service life



CAUTION! Danger due to material fatigue.

If the service life is exceeded, it cannot be guaranteed that the material of the rotors and the accessories will withstand the stresses during centrifugation.

- ▶ Do not use accessories that have exceeded their maximum service life.

All rotors and rotor lids can be used during the entire service life of the centrifuge if the following conditions are met:

- proper use
- recommended maintenance
- undamaged condition

Accessories	Maximum service life after initial setup	
Aerosol-tight rotor lid	–	3 years
Seals in the aerosol-tight rotor lid	50 autoclaving cycles	–
Adapter	–	1 year

The date of manufacture is stamped on the rotors in the format 2015-03 (= March 2015).

3 Cleaning and disinfection

Use a mild cleaning agent for cleaning. Use alcohol (ethanol, isopropanol) or alcoholic disinfectants for disinfection.

Clean and disinfect the rotor and all accessories (rotor lid and adapter).

1. Remove the rotor from the centrifuge.
2. Use a test tube brush to clean/disinfect the rotor bores of fixed-angle rotors.
Do not immerse the rotor as liquid may enter the hollow spaces.
3. Clean the rotor cone with a soft, dry, lint-free cloth. Do not lubricate the rotor cone.
4. Inspect the rotor cone for damage.
5. Place the rotors and accessories on a towel to dry. Place the fixed-angle rotors with the rotor bores facing downward.
6. Rotor lid with replaceable seal: Correctly reinsert the seal in the clean and dry groove.

- i** ▶ Do not use any discolored, porous or otherwise defective seals. Also observe the operating manual of the centrifuge.
- ▶ Apply a thin layer of pivot grease on the lid thread of fixed-angle rotors at regular intervals.

Autoclavability - All fixed-angle rotors, rotor lids and adapters can be autoclaved (121 °C, 20 min).

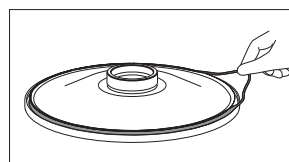
- i** ▶ The seals on aerosol-tight rotor lids with replaceable seals must be replaced after 50 autoclaving cycles.

4 Replacing the seal on the rotor lid

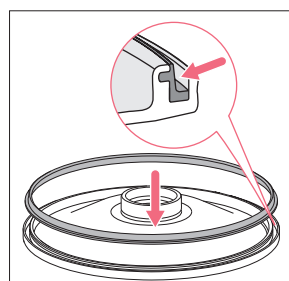
Prerequisites: The rotor lid has been removed in accordance with the operating manual for the centrifuge.

Recommended cleaning agents:

- Alcohol 70% (ethanol, isopropanol)
- Mild neutral cleaning agent



1. Remove and dispose of the old sealing ring.
2. Thoroughly clean the groove for the sealing ring.
3. Clean and disinfect the rotor lid using the recommended cleaning agents.
4. Rinse the rotor lid thoroughly with distilled water.



5. Moisten the sealing ring with clean water.
6. Insert the sealing ring exactly in the clean and dry groove of the rotor lid.
7. Press the sealing ring into the lateral groove, around the entire circumference of the rotor lid.
8. Place the rotor lid with the underside facing upwards on a cloth.
9. Leave the rotor lid to dry for 5 – 10 minutes.
10. Perform a visual inspection. The seal must be flush with the groove of the rotor lid around the entire circumference and must not protrude at any point.
11. Fit the rotor lid on the rotor.
12. Leave the rotor lid open when the rotor is not being used.

- i** The rotor lid cannot close properly if the sealing ring is not correctly inserted.

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