

INSTRUCTION MANUAL

MINICENTRIFUGE

TYPE 159.00, 159.01, 159.02, 159.03

In order to utilize MINI CENTRIFUGE type 159 to the best possible extent, it is absolutely essential that these instructions be read before taking the centrifuge into use.

After the actual instructions for use, guidance is provided in the rectification of minor operational failures.

If the centrifuge cannot be made to function in the normal manner without dismantling, please contact us or our agent.

We cannot be held responsible for any failure or damage arising during transport (despatch) as a result of poor packing.

The factory guarantee will no longer apply if, during the guarantee period, the centrifuge is interfered with (dismantled) without our express consent or the consent of our agents.

DESCRIPTION

Model 159 is a mini centrifuge designed for a various number of rotors for testtubes 1,5 / 2,0 ml, 0,5 ml, 0,2 ml PCR, PCR strips and NUNC 1,0 ml cryo vials.

The Centrifuge can be delivered in different models, with or without speed regulation as well as extra high models for "SPIN COLUMNS".

SAFETY PRECAUTIONS

DO NOT OPERATE MINICENTRIFUGE 159 WHEN:

- The centrifuge has not been installed properly.
- The centrifuge is partially dismantled.
- Service has been attempted by unauthorized or unqualified personel.
- The rotor has not been installed and secured correct.
- Using rotors or accessories not produced by OLE DICH APS.
- The centrifuge is located in an explosive atmosphere.
- Materials to be centrifuged are chemically reactive.
- The rotor load is not properly balanced.

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STANDARD ACCESSORIES

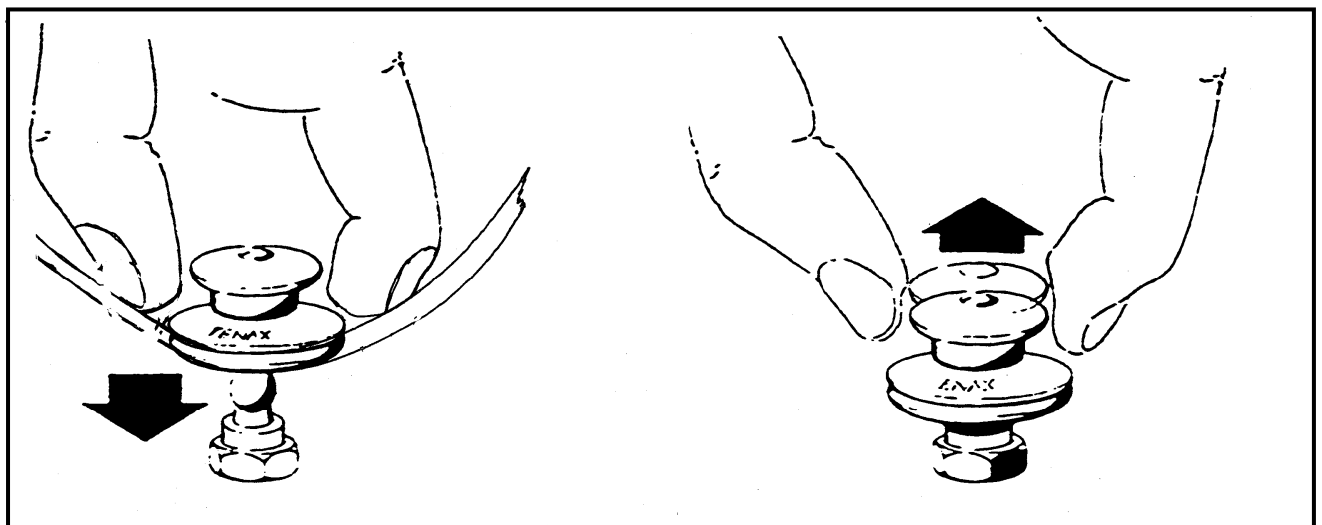
- 1 pcs Instruction manual
- 1 pcs Rotorkey
- 1 pcs Power supply

INSTALLATION

The Centrifuge type 159 is delivered in a carton with protective cushions. Remove the centrifuge from the carton. Please keep the carton and the cushions until it has been established that your unit works properly.

The accessories supplied with the centrifuge should be kept with the instruction manual near the centrifuge.

Before operating the centrifuge, check that the powersupply corresponds to the label placed on the low volt power supply. Open the lid, and hereafter connect the low volt power cable to the centrifuge.



Close the lid by pressing down the lid.

Pull the grip will release the cover.

NOTICE!

A PARTIALLY LOADED ROTOR MAY BE CENTRIFUGED. IN THIS CASE IT IS VERY IMPORTANT THAT THE OCCUPIED HOLES ARE OPPOSITE EACH OTHER.

NEVER SPIN ONE TUBE ALONE!

The centrifuge starts immediately after closing the lid, and stops immediately when lid is opened. Opening and closing the lid is at the same time main switch. Speed control 3.500 – 7.000 rpm only model 159.01 and 159.03.

DO NOT TRY TO STOP ROTOR BY HAND IF BRAKE BY SOME REASON FAILS!!!!

MOUNTING AND REMOVING THE ROTOR.

The following 7 different rotors can be used in centrifuge type 159.

<p>Angle rotor 6 x 1,5/2,0 ml and 12 x 0,2 ml Order nr: 159.12.DPCR Tube: 1,5/2,0 ml (10 x 40 mm) Tube: 0,2 ml (6,1 x 20 mm) Max. Rpm: 7.200 rpm Radius: 5,5 / 3,5 cm RCF (g-value): 3.300 / 2.000 x g</p>	<p>Angle rotor 6 x 1,5/2,0 ml and 12 x 0,5 ml Order nr: 159.18.DP Tube: 1,5/2,0 ml (10 x 40 mm) Tube: 0,5 ml (7,8 x 30 mm) Max. Rpm: 7.200 rpm Radius: 5,5 / 4,7 cm RCF (g-value): 3.300 / 2.725 x g</p>
<p>Angle rotor 8 x 1,5/2,0 ml Order nr: 159.08.D Tube: 1,5/2,0 ml (10 x 40 mm) Max. rpm: 7.200 rpm Radius: 5,5 cm RCF (g-value): 3.300 x g</p>	<p>Angle rotor 18 x 0,5 ml Order nr: 159.18.P Tube: 0,5 ml (8 x 28 mm) Max. Rpm: 7.200 rpm Radius: 4,7 cm RCF (g-value): 2.725 x g</p>
<p>Angle rotor 4 x PCR strips Order nr: 159.04.PCR Tubes: PCR strips of 8 pcs Max. rpm: 7.200 rpm Radius: 3,4 cm RCF (g-value): 1.970 x g</p>	<p>Angle rotor 6 x 1,0 ml NUNC cryo vial Order nr: 159.06.01 Tube: 1,0 ml (13 x 41 mm) Max. rpm: 7.200 rpm Radius: 4,3 cm RCF (g-value): 2.500 x g</p>
<p>Angle rotor 18 x 0,2 ml Order nr: 159.18.PCR Tube: 0,2 ml (6,1 x 20 mm) Max. rpm: 7.200 rpm Radius: 3,5/4,3 cm RCF (g-value): 2.000 / 2.500 x g</p>	<p>Approx RPM: (Only model 159.01 and 159.03)</p> <p>min. = 3.500 rpm. g-force rotor 159.08.D = 735 2 = 3.700 rpm. g-force rotor 159.08.D = 980 3 = 4.200 rpm. g-force rotor 159.08.D = 1.250 4 = 4.800 rpm. g-force rotor 159.08.D = 1.550 5 = 5.200 rpm. g-force rotor 159.08.D = 1.860 6 = 5.500 rpm. g-force rotor 159.08.D = 1.950 7 = 6.000 rpm. g-force rotor 159.08.D = 2.200 8 = 6.700 rpm. g-force rotor 159.08.D = 2.500 max. = 7.000 rpm. g-force rotor 159.08.D = 3.000</p>

MOUNTING AND SECURING THE ROTOR

Clean rotor hole and motor shaft. Place the rotor on the motor shaft. Place the rotor screw with disk on the motorshaft and tighten it by hand. Then hold the rotor with the one hand and tighten the screw with the rotorkey. **Tighten the screw clockwise.**

IT IS VERY IMPORTANT TO USE THE DISK UNDER THE SCREW !!!

REMOVING THE ROTOR

Hold the rotor with the one hand, and loosen the screw with the rotorkey.
Loosen the screw counter clockwise.

When loading the rotor, difference in weight between the tubes should not exceed 0,2 gram.

IMPORTANT!

- Always check the screw before starting the centrifuge.
- Never use a rotor which shows signs of corrosion or mechanical damage.
- Never centrifuge strongly corrosive materials.

SERVICE AND MAINTENANCE

The centrifugen requires no routine maintenance. If any service should be required, this have to be done only by authorized and qualified personnel.

If the centrifuge vibrates excessively, creates noise or shows other signs of irregularities, the centrifuge must be stopped immediately and the cause must be found. If the cause is not found, the centrifuge must be returned for service immediately.

Rotor and rotor-chamber must be washed and disinfected immediately if there is spilt liquid. In the event of visible pollution of the centrifuge with blood, tissue fluids or the like, disinfection must be carried out immediately.

It is recommended that in the event of the risk of infection with virus, (AIDS, hepatitis, or the like), 3% Korsolin must be used, and gloves must be used in the event of direct contact.

In the event of the risk of infection from bacteria, 2% Bacillotox can be used.
As an alternative, 62% hospital spirit can be used.

Always keep the rotorchamber, rotors and rotor accessories clean. For more thorough cleaning, use a neutral cleaning agent (PH 6-8) applied to a soft cloth. Excessive amounts of liquid should be avoided. Liquid should not come into contact with the motor. After cleaning, ensure that all parts are dried thoroughly. **The rotor can be autoclaved if necessary.**

Technical data:

Max. rpm model 159.00 and 159.02: 7.200 rpm

Min and max. rpm model 159.01 and 159.03: 3.500 - 7.000 rpm

Temperature: 0 - 40 °C

Power supply adapter: 230 V AC +-10% 50/60 Hz.

Low voltage centrifuge: 17 volt DC 15 watt.

Fuse: 1,6 A F built into the power supply adapter (Should only be done by a qualified engineer).

Dimension 159.00 and 159.02: Ø 153 x H 150 mm.

Dimension 159.01 and 159.03: Ø 153 x H 170 mm.

Dimension power supply adapter: 100 x 51 x 65 mm.

Weight approx: 1,8 kg. Without power supply adapter.

DK: EU-OVERENSSTEMMELSESERKLÆRING



UK: EU-DECLARATION OF CONFORMITY

OLE DICH

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erklærer på eget ansvar, at følgende produkter:
declare on own responsibility that the following products:

CENTRIFUGE: 159

som er omfattet af denne erklæring, er i overensstemmelse med følgende standarder:
covered by this declaration, are in conformity with the following standards:

EN61326-1:1997, EN61010-1:1995, EN61010-2-020:1992, EN61000....., ENV50204:1995

i.h.t. bestemmelserne i direktiv:
according to conformity in directive:

Maskindirektivet / Mashinery Directive: 89/392/EEC, (91/368/EEC), (93/44/EEC), (93/68/EEC).

Lavspændingsdirektiv / Low voltage Directive: 73/23/EEC, (93/68EEC).

EMC-direktivet / EMC Directive: 89/336/EEC, (92/31/EEC), (93/68EEC).

Adm. Direktør / Managing Director

Leif Magnussen

Hvidovre, november 1999.

LIMITED WARRANTY

Provided there are errors and/or deficiencies on this unit please make use of the limited warranty included with the unit.

WARRANTY PERIOD

This warranty is valid for 36 months from documented date of purchase.

SCOPE OF WARRANTY

Supplier is responsible for correcting any deficiencies in the unit arising from production and/or from material used in production, provided these deficiencies are detected during normal use of the unit.

The unit must be transferred to the manufacturer or to the supplier stating the date of purchase and the serial number of the unit. It is the customers responsibility that the unit is properly packaged for transportation.

Warranty does NOT cover shipment damages occurring due to inadequate or faulty packaging.

Warranty repair is supplied without any additional cost to the customer. Repair in the period of warranty does NOT invoke extension of the current warranty period or start of a new warranty period.

Following warranty repair the unit is shipped to the customer at the cost of the supplier.

THE WARRANTY DOES NOT COVER:

Faulty equipment or damages having occurred by wrongly handling, misuse, failing to perform preventive maintenance as described in this manual, water leakage, erroneous installation or connection, by fire, accident, lightning, extraordinary variations in power supply or other electrical irregularities as fuses in the supply net as well as repair or other dismantling of the unit performed by other than the manufacturer or the supplier without written permission of either of the two.

DATE OF PURCHASE:

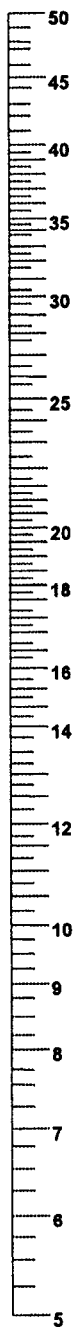
STAMP:

INVOICE NO:

TYPE/SERIAL NUMBER:

Determination of g-values

Spinning radius in cm



The relative centrifugal force (g-force) can be estimated by using the chart on this page or by applying the following formula:

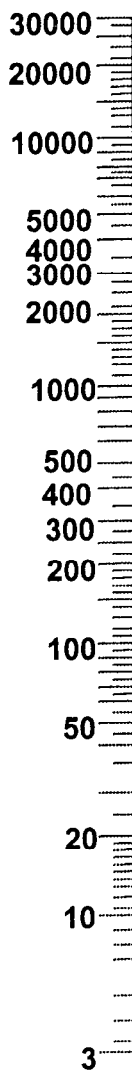
$$g = 11.18 \times r \times \left(\frac{n}{1000} \right)^2$$

where: r = radius in cm
 n = speed in rpm

The radius from the centre of the rotation axis to the bottom of the outermost portion of the tube should be used. RCF is expressed relative to the earth's gravity.

To use this chart, find the radius value on the radius scale. Place the edge of a ruler on the value. Place the right side edge of the ruler on the speed scale at the desired speed. The estimated RCF can then be read from the RCF scale where the ruler edge passes through it. This chart can also be used to determine the proper speed for desired RCF value.

Relative centrifugal force in g



Speed (RPM) per minute

