

The University of Iowa Dezii Translational Vision Research Group

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TITLE: Operation of the Thermo Scientific Sorvall ST 8 Centrifuge

SOP Number: D-GLO-EQP-005 Revision Number: 0

Effective Date: 08 Aug 2015

Author: _____ Date: _____

Reviewer: _____ Date: _____

QA Approval: _____ Date: _____

A. OBJECTIVE

This document describes the operation of the Thermo Scientific ST 8 Centrifuge in The University of Iowa Dezii Translational Vision Research Group (DTVR).

B. APPLICABILITY

This document applies to all personnel at DTVR.

C. PROCEDURE

1.0 SET UP

1.1 Freezer Components

1. Location

- 4.1.1.1 The centrifuge should only be operated indoors.
- 4.1.1.2 A safety zone of at least 30 cm must be maintained around the centrifuge. People and hazardous substances must be kept out of the safety zone while centrifuging.
- 4.1.1.3 The supporting structure must be stable, free of resonance and plane, for example a laboratory bench.
- 4.1.1.4 The supporting structure must be suitable for horizontal setup of the centrifuge.
- 4.1.1.5 The centrifuge should not be exposed to heat.
- 4.1.1.6 The set-up location must be well-ventilated at all times.

4.1.2 Mains Connection

- 4.1.2.1 Press Main Power Switch to ("0").
- 4.1.2.2 Plug the centrifuge into grounded electrical sockets only.
- 4.1.2.3 Check whether the cable complies with the U.S. safety standards.
- 4.1.2.4 Make sure that the voltage and frequency correspond to the figures on the rating plate.
- 4.1.2.5 Establish the connection to the power supply with the connecting cable.

4.1.3 Control Panel

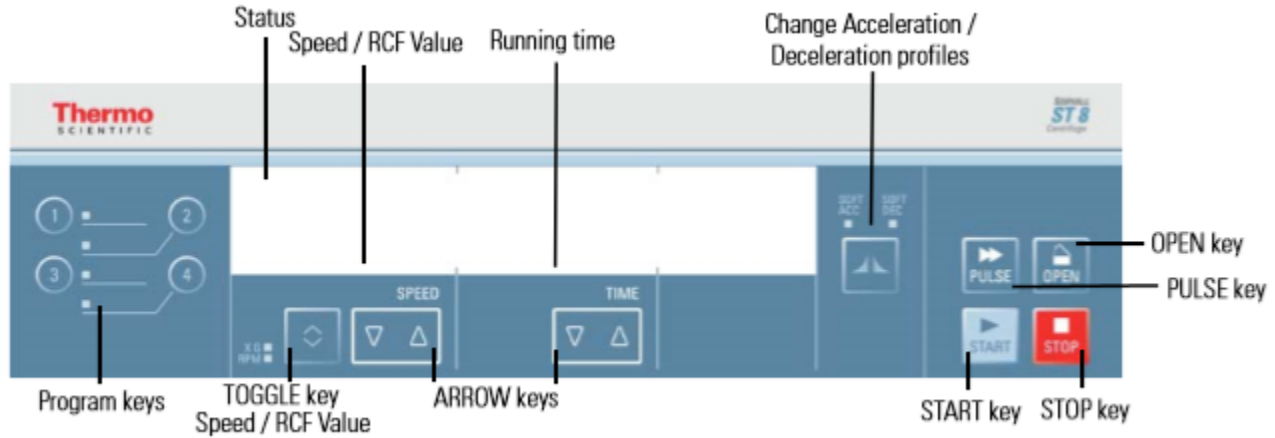
- 4.1.3.1 The control panel contains the keys and displays of the centrifuge (only the power switch is located on the back of the device).

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4.1.1 Keys

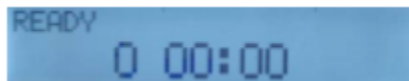
4.1.1.1 The keys allow user input for controlling the operating mode as follows:

4.2 OPERATIONS

4.2.1 Switch on Centrifuge

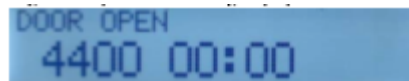
4.2.1.1 Turn on the power switch on the back of the device. The device performs a self-check of its software.

4.2.1.1.1 When the centrifuge lid is closed the following display shows:



The speed and time displays read 0.

4.2.1.1.2 When the centrifuge lid is open the following display shows:



The speed and time displays show the pre-set values.

4.2.2 Open Lid

4.2.2.1 Press the OPEN key.

WARNING: Do not reach into the gap between the lid and the housing. Use the emergency release only for malfunctions and power failures.

4.2.3 Close Lid

4.2.3.1 Close the lid by pressing down on it lightly in the middle or on both sides of it.

4.2.4 Rotor Installation

4.2.4.1 The approved rotor for the Thermo Scientific Sorvall ST 8 that will be used is:

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MicroClick 30 x 2 microtube rotor / Model: 75005719 / Max. 14000 rpm / Max. load 30 x 4g / Autoclavable 138°C

Note: Other approved rotors for the Thermo Scientific Sorvall ST 8 which may be used are listed in the Instruction Manual, page 20.

Use only rotors and accessories from this list in the centrifuge.

- 4.2.4.2 Open the lid of the centrifuge and if necessary remove any dust, foreign objects or residue from the chamber. Auto-Lock and O-Ring must be clean and undamaged.
- 4.2.4.3 Place the rotor over the centrifuge spindle and let it slide slowly down the centrifuge spindle. The rotor clicks automatically into place.
- 4.2.4.4 Check if the rotor is properly installed by lifting it slightly on the handle. If the rotor can be pulled up, then it must be reclamped to the centrifuge spindle.
- 4.2.4.5 If available close the rotor with the rotor lid.
- 4.2.4.6 Close the centrifuge lid.

4.2.5 Starting the Centrifuge Run

- 4.2.5.1 Press the START key on the control panel. The centrifuge accelerates to the pre-set speed with the time display active.
- 4.2.5.2 If the speed setting is higher than the maximum permissible speed or RCF-value for the particular rotor, then the display will show the message, "Limit [max. permitted value in rcf or xg]" once the centrifuge has been started.
- 4.2.5.3 Within 10 seconds you can apply this value by pressing the START key again, and the centrifuging program will continue. Otherwise the centrifuge will stop and you will have to enter a valid number.
- 4.2.5.4 The lid cannot be opened as long as the centrifuge is running.

4.2.6 Imbalance Indicator

- 4.2.6.1 If a load is imbalanced, this will be indicated at speed higher than approximately 300 rpm by the message, "Imbalanced load".
- 4.2.6.2 The run will terminate.
- 4.2.6.3 Check the loading and start the centrifuge once again. See the information on proper loading in the rotor instruction manual. For information on troubleshooting, see section, "Troubleshooting by Guide", on page 55 of the Instruction Manual.

4.2.7 Stopping the Centrifuge Run

- 4.2.7.1 With pre-set running time.
 - 4.2.7.1.1 If the running time is preset, you only have to wait until the centrifuge stops automatically when the preset time limit expires.

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4.2.7.1.2 As soon as the speed drops to zero, the message RUN COMPLETED will appear in the display. By pressing the OPEN key, you can open the lid and remove the centrifuged samples.

4.2.7.1.3 The centrifuge can be stopped at any time by pressing the STOP key.

4.2.7.2 Continuous Operation

4.2.7.2.1 If continuous operation was selected, the centrifuge will have to be stopped manually. Press the STOP key on the control panel. The centrifuge will be decelerated at the designated rate. The message RUN COMPLETED will illuminate, and after pressing the OPEN key, the lid will open and you can remove the centrifuged samples.

4.2.7.3 Short-term Centrifugation

4.2.7.3.1 For short-term centrifugation, the Thermo Scientific Sorvall ST 8 has a PULSE-function.

4.2.7.3.2 Hold down the PULSE key, spinning will start and continue until the key is let go.

4.2.7.3.3 The centrifuge accelerates and brakes at maximum power. Any rpm or RCF entered beforehand is overridden.

4.2.7.3.4 Check carefully whether you have to maintain a certain speed for your application.

4.2.7.3.5 During the acceleration process, time is counted forward in seconds. The reading stays displayed until the centrifuge lid is opened.

4.2.7.4 Removing the Rotor

4.2.7.4.1 Open the centrifuge lid.

4.2.7.4.2 Grab the rotor handle and press against the green Auto-Lock button. At the same time, pull the rotor directly upwards and remove it from the centrifuge spindle. Make sure not to tilt the rotor while doing this.

4.3 CLEANING

4.3.1 When cleaning the centrifuge:

4.3.1.1 Use warm water with a neutral solvent.

4.3.1.2 Never use caustic cleaning agents.

4.3.1.3 Rinse the cavities out thoroughly.

4.3.1.4 Use a soft brush without metal bristles to remove stubborn residue.

4.3.1.5 Afterwards rinse with distilled water.

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- 4.3.1.6 Place the rotors on a plastic grate with their cavities pointing down.
- 4.3.1.7 If drying boxes are used, the temperature must never exceed 50°C, since higher temperatures could damage the material and shorten the lifetime of the parts.
- 4.3.1.8 Use only disinfectants with a pH of 6-8.
- 4.3.1.9 Dry aluminum parts off with a soft cloth.
- 4.3.1.10 After cleaning, treat the entire surface of aluminum parts with corrosion protection oil. Also treat the cavities with oil.
- 4.3.1.11 Store the aluminum parts at room temperature or in a cold-storage room with the cavities pointing down.

4.3.2 Cleaning centrifuge and accessories as follows:

- 4.3.2.1 Open the centrifuge.
- 4.3.2.2 Turn off the centrifuge.
- 4.3.2.3 Pull out the power supply plug.
- 4.3.2.4 Grasp the rotor with both hands and lift it vertically off the centrifuge spindle.
- 4.3.2.5 Remove the centrifuge tubes and adaptors.
- 4.3.2.6 Use a neutral cleaning agent with a pH value between 6 and 8 for cleaning.
- 4.3.2.7 Dry all of the rotors and accessories after cleaning with a cloth or in a warm air cabinet at a maximum temperature of 50°C.
- 4.3.2.8 After cleaning treat with oil.

Tread the bolt of the swing out rotor with bolt grease.

D. HISTORY

Effective Date	Revision	Change
08 Aug 2015	0	Original document