



Ultraspeed centrifuge

## Thermo Scientific Sorvall MTX and MX+ Micro-Ultracentrifuge Series

Performance simplified at every turn

# Micro-ultracentrifugation simplified at every turn

Designed to deliver excellent performance with RCF up to 1,048,000 x g and versatility for rapid small-volume processing applications, our Thermo Scientific™ Sorvall™ MTX and MX+ micro-ultracentrifuges feature advanced functionality in a compact footprint readily accessible from the bench top or within the laboratory.

## Unique Fiberlite F55-12x1.5 MUC rotor

Lightweight and fatigue-resistant carbon fiber rotor provides performance at 55,000 rpm (221,575 xg) and exceptional value with 15 years warranty.

## Fast Separations

Advanced sample separation performance and processing capacity, combining high speeds and RCFs with fast accel/decel rates.

## Simple yet Powerful Operator Environment

Flexible control, set-up and run options improve productivity.

# Operation simplified

Easy to use, the Sorvall MTX and MX+ micro-ultracentrifuge series provide advanced functionality, rotor management and controlled access, to meet your laboratory needs.

## Innovative Software for Improved Safety and Efficiency

The color LCD touchscreen keeps operation and programming simple with an easy to read and navigate display. A graphical interface enables users to easily operate the system and select various menus and functions, all by the touch of a button.

## Manage Rotor Life

The Rotor Life Management system allows you to log and control individual rotor usage by tracking the number of rotor runs and total spin hours.

## Rotor Catalog

All rotors with model name and specifications are listed for your reference.

## Check Rotor Specifications

Key specifications for rotors are stored in memory, and can be recalled and viewed on the display screen.



## Flexibility for a Full Range of Micro-Ultra Applications

Accommodating tubes from 0.2 mL to 30 mL with a choice of fixed angle, swinging bucket or vertical rotors, our Sorvall micro-ultracentrifuges address the full range of small volume processing applications:

- Virus (i.e., HIV, SRSV, rotavirus)
- Cellular organelles (i.e., ribosomes, mitochondria, microsomes)
- Lipoproteins
- Nanoparticles
- Nucleic Acids

## Operating Histories

Histories are recorded in memory (up to 100 cases), facilitating your ability to recall past operating parameters.

| Name       | SPEED | RCFmax | RCFavg | ml       |
|------------|-------|--------|--------|----------|
| S58-A      | 58000 | 288958 | 219067 | 8x 13.50 |
| S55-A      | 55000 | 259839 | 198991 | 8x 13.50 |
| S55-A2     | 55000 | 201046 | 163202 | 12x 1.50 |
| F55-12x1.5 | 55000 | 221575 | 174821 | 12x 1.50 |
| S55-S      | 55000 | 258826 | 206114 | 4x 2.20  |



# Operation simplified

Innovative software puts you in control with more options. Customize set-up and run options for greater flexibility and efficiency. Control access in a multi-user environment for better security.



## Control Access

The control access feature restricts access to authorized users in a multi-user environment. An identification (ID) code is required before the centrifuge will operate.

## Real-Time Control / Program Start and Stop Times

The real-time control mode lets you set up a delayed start/stop run. Schedule runs so that your samples are ready when needed.

## Actual Run Timer

With this feature, actual run timer starts when the set speed is attained, providing precise control of the net run-time for high-reproducibility separation. (Conventional run timer is also selectable.)

## GMP/GLP Support

Optional LogManager software supports 21 CFR 11 with real time monitoring of up to 16 LAN connected centrifuges, encrypted data files, audit trail and real time graphic run monitor.

## Set-Up and Recall Runs

Save time and steps for commonly used protocols by creating and storing up to 20 programs into memory in RPM or RCF mode, along with user ID and comments. Each program has up to 9 steps of operating parameters. You can change operating parameters, such as speed, time, temperature, during operation under one program.

## Control Runs by Speed or g-Force

In automatic RCF/RPM mode, you can set runs to a maximum speed or to a desired g-force. No protocol conversion is necessary.

## Perform Pulse-Runs

The pulse-run function provides quick spins of a few seconds, made possible with the excellent acceleration rate of the Sorvall MTX and MX+ micro-ultracentrifuges.

## Perform Step-Runs

The step-run function provides greater application flexibility.



# The Next Generation of Benchtop Micro-Ultracentrifuge: Sorvall MTX 150

Our benchtop micro-ultracentrifuge delivers outstanding speed of 150,000 rpm and is designed to accomplish the most demanding ultracentrifuge applications with g-force up to 1,048,000 x g and rotor capacities up to 180 mL. With noise levels below 45 dBA and an intuitive LCD touchscreen interface to simplify operation, it is ideal for personal use on the lab bench. Coupled with standard electrical outlet capabilities, you have the added convenience of unit placement in your laboratory. Enhancing ease-of-use and designed for safe operation, it features a self-locking rotor system and imbalance tolerant drive, with an optional HEPA filter to improve biocontainment.

## Self-Locking Rotor System

Self-locking rotor system automatically secures the rotor to the drive shaft. This innovation eliminates the need to manually secure the rotor, facilitating rotor installation and enhancing safety.

## GMP/GLP Data Compliance and Management

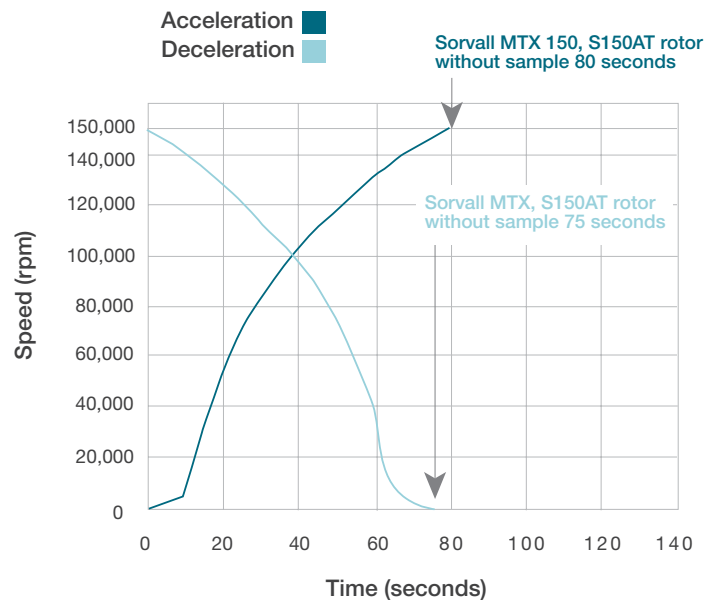
A USB port allows connectivity to a memory stick, facilitating output of operating data in CSV format for traceability and quality control.

## Fast Acceleration and Deceleration

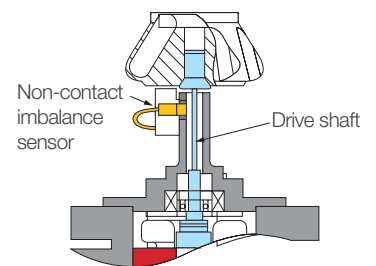
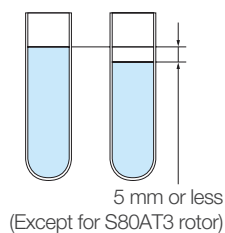
The high torque drive in the Sorvall MTX 150 provides fast acceleration and deceleration rates, which means quicker separations and less waiting at the end of the run.

## Powerful Imbalance Protection

For increased safety and convenience, the Sorvall MTX 150 has an imbalance tolerant drive allowing eye-balancing of tubes.



Non-contact imbalance protection



# Compact Floor Model Micro-ultracentrifuges: Sorvall MX 150+/120+

The 150,000 rpm Sorvall MX 150+ and 120,000 rpm Sorvall MX 120+ micro-ultracentrifuges incorporate functionality to simplify rotor loading and instrument set-up and operation. Their combination of performance, capacity and compactness provides the floor model micro-ultracentrifuge capabilities you need for high speed, small volume applications.

## High Speeds and Low K-factors

150,000 rpm or 120,000 rpm maximum speeds with optimized rotor designs provide shorter total spin times.

## Compact and Personal

Small 0.53 sq.m (5.7 sq.ft.) footprint allows for convenient location in your lab.

## Quiet Operation

With noise levels below 45 dBA, you can work next to it without hearing it run.

## Versatile Performance

A wide range of rotors and tube volumes support a host of different sample requirements.

## Rugged Reliability

Maintenance-free brushless drive system and rotor imbalance protection ensures dependable performance.








## Rotor Selection

| Description                         | Capacity*<br>(# places x volume) | Max. speed (rpm) | Max. RCF (x g) | K-factor | Cat. No.   |
|-------------------------------------|----------------------------------|------------------|----------------|----------|------------|
| <b>Fiberlite fixed angle rotors</b> |                                  |                  |                |          |            |
| F55-12x1.5MUC                       | 12 x 1.5 mL                      | 55,000           | 221,575        | 45       | 096-127033 |
| <b>Fixed angle rotors</b>           |                                  |                  |                |          |            |
| S150-AT                             | 8 x 2 mL                         | 150,000          | 899,744        | 6.1      | 45582      |
| S140-AT                             | 10 x 2 mL                        | 140,000          | 1,048,684      | 5.0      | 45978      |
| S120-AT3                            | 14 x 0.5 mL                      | 120,000          | 649,826        | 7.8      | 45584      |
| S120-AT2                            | 10 x 2 mL                        | 120,000          | 649,826        | 7.8      | 45583      |
| S110-AT                             | 8 x 5 mL                         | 110,000          | 690,652        | 15       | 45539      |
| S100-AT4                            | 6 x 3.5 mL                       | 100,000          | 540,628        | 16       | 45586      |
| S100-AT3                            | 20 x 0.2 mL                      | 100,000          | 435,630        | 7.0      | 45585      |
| S80-AT2                             | 30 x 0.5 mL                      | 80,000           | 357,440        | 14       | 45589      |
| S80-AT3                             | 8 x 8.3 mL                       | 80,000           | 414,630        | 23       | 45590      |
| S70-AT                              | 20 x 0.5 mL                      | 70,000           | 307,052        | 31       | 45591      |
| S58-A                               | 8 x 13.5 mL                      | 58,000           | 288,958        | 50       | 45866      |
| S55-A2                              | 12 x 1.5 mL                      | 55,000           | 201,046        | 40       | 45865      |
| S50-A                               | 6 x 30 mL                        | 50,000           | 209,438        | 61       | 45540      |
| <b>Swinging bucket rotors</b>       |                                  |                  |                |          |            |
| S55-S                               | 4 x 2.2 mL                       | 55,000           | 258,826        | 44       | 45594      |
| S52-ST                              | 4 x 5 mL                         | 52,000           | 275,458        | 79       | 45977      |
| S50-ST                              | 4 x 7 mL                         | 50,000           | 252,721        | 77       | 45541      |
| <b>Vertical rotors</b>              |                                  |                  |                |          |            |
| S120-VT                             | 8 x 2 mL                         | 120,000          | 500,237        | 7.9      | 45593      |

\* Volumes may not be exact

## Sorvall MTX and MX+ Series Rotor Highlights

|  |   |   |
|--|---|---|
| F55-12x1.5 MUC Fiberlite Fixed Angle Rotor |  | <ul style="list-style-type: none"> <li>• Unique, lightweight and fatigue-resistant carbon fiber rotor</li> <li>• Effective choice for lipemia removal in blood samples prior to biochemical tests</li> </ul>  |
| S50-A Fixed Angle Rotor                    |  | <ul style="list-style-type: none"> <li>• Our largest capacity rotor, supporting 6 x 30 mL tubes</li> <li>• “T-shape” handle provides easy opening and closing of rotor cover</li> </ul>   |
| S50-ST Swinging Bucket Rotor               |  | <ul style="list-style-type: none"> <li>• Our largest capacity swinging bucket rotor (4 x 7 mL), spins up to 28 mL per run</li> <li>• Top-loading buckets reduce mishandling resulting in greater safety</li> <li>• Good for small volume density gradient separations of cell organelles, proteins and viruses</li> </ul>       |
| S110-AT Fixed Angle Rotor                  |  | <ul style="list-style-type: none"> <li>• High maximum RCF 691,000 x g with nominal capacity of 8 x 5 mL</li> <li>• Reduced separation time</li> <li>• Screw cap microtube can be centrifuged at 581,000 x g with exclusive adapter</li> </ul>   |
| S140-AT Fixed Angle Rotor                  |  | <ul style="list-style-type: none"> <li>• Highest RCF with over 1,048,000 x g in the Sorvall MX 150+ and MTX 150</li> <li>• Fast separations with small K-factor of 5.0</li> <li>• Ideal for rapid separation of serum lipoproteins, DNA, RNA and subcellular fractionation</li> <li>• Compatible with Re-Seal™ tubes</li> </ul> |

### Specifications

|  | Sorvall MTX 150                               | Sorvall MX 150+  | Sorvall MX120+                   |
|--|---|--|----------------------------------|
| <b>Type</b>                                      | Benchtop                                      | Floor model  | Floor model                      |
| <b>Max. Speed</b>                                | 150,000 rpm                                   | 150,000 rpm  | 120,000 rpm                      |
| <b>Max. Rcf</b>                                  | 1,048,680 x g (with S140-AT rotor)            | 1,048,680 x g (with S140-AT rotor)   | 770,460 x g (with S140-AT rotor) |
| <b>Max. Rotor capacity — fixed angle</b>         |   | 180 mL (6 x 30 mL) (with S50A rotor)   |                                  |
| <b>Max. Rotor capacity — swinging bucket</b>     |   | 28 mL (4 x 7 mL) (with S50-ST rotor)   |                                  |
| <b>Rotor attachment</b>                          |   | Self-locking   |                                  |
| <b>Accel/decel. profiles</b>                     |   | 9/9, brake off   |                                  |
| <b>Speed control accuracy</b>                    |   | ± 50 rpm (5,000 to max. speed)   |                                  |
| <b>Program memory</b>                            |   | 20, each with up to 9 steps  |                                  |
| <b>Timer</b>                                     |   | 1 min. to 99 hrs. and 59 min. with HOLD and RTC (real-time control) function         |                                  |
| <b>Control panel</b>                             |   | Touch Sensitive LCD  |                                  |
| <b>Refrigeration system</b>                      |   | Solid state thermoelectric cooling (HFC-free)  |                                  |
| <b>Set temperature range</b>                     |   | 0 – 40°C in 1 °C increments  |                                  |
| <b>Ambient temperature operating range</b>       |   | 5 – 35°C   |                                  |
| <b>Vacuum system</b>                             |   | Oil rotary vacuum pump and oil diffusion pump  |                                  |
| <b>Noise level (measured 1m from instrument)</b> |   | < 45 dBA   |                                  |
| <b>Heat output</b>                               |   | < 0.7 kW per Hr  |                                  |
| <b>Dimensions (h x w x d)</b>                    | 408 x 590 x 582 mm<br>(16.1 x 23.2 x 22.9 in) | 910 x 440 x 520 mm (35.8 x 17.3 x 20.5 in)<br>Height to work surface 790 mm/ 31.1 in |                                  |
| <b>Weight</b>                                    | 97 kg/ 213 lb                                 | 105 kg/ 231 lb   |                                  |
| <b>Certifications and standards</b>              |   | cCSAus, CE, IEC61010-2-020, EN61326  |                                  |
| <b>Warranty</b>                                  |   | 1 Yrs Unit, 5 Yrs Drive (Non-prorated)   |                                  |

**Ordering information**

| Description  | Cat. No. |
|--|----------|
| <b>Benchtop Sorvall MTX 150 micro-ultracentrifuges</b> |          |
| Sorvall MTX 150, 115 V, 50/60 Hz, 12 A single phase    | 46960    |
| Sorvall MTX 150, 208 V, 50/60 Hz, 6 A single phase     | 46961    |
| Sorvall MTX 150, 220 V, 50/60 Hz, 6 A single phase     | 46962    |
| Sorvall MTX 150, 230 V 50/60 Hz, 6 A single phase      | 46963    |
| Sorvall MTX 150, 240 V, 50/60 z, 6 A single phase      | 46964    |
| <b>Floor models Sorvall MX+ micro-ultracentrifuges</b> |          |
| Sorvall MX 120+, 115 V, 50/60 Hz, 12 A single phase    | 50135645 |
| Sorvall MX 120+, 208 V, 50/60 Hz, 6 A single phase     | 50135646 |
| Sorvall MX 120+, 220 V, 50/60 Hz, 6 A single phase     | 50135647 |
| Sorvall MX 120+, 230 V, 50/60 Hz, 6 A single phase     | 50135648 |
| Sorvall MX 120+, 240 V, 50/60 Hz, 6 A single phase     | 50135649 |
| Sorvall MX 150+, 115 V, 50/60 Hz, 12 A single phase    | 50135650 |
| Sorvall MX 150+, 208 V, 50/60 Hz, 6 A single phase     | 50135641 |
| Sorvall MX 150+, 220 V, 50/60 Hz, 6 A single phase     | 50135642 |
| Sorvall MX 150+, 230 V, 50/60 Hz, 6 A single phase     | 50135643 |
| Sorvall MX 150+, 240 V, 50/60 Hz, 6 A single phase     | 50135644 |
| <b>Optional accessories</b>                            |          |
| LogManager software                                    | 50149346 |
| Network Interface for LogManager software              | 75000010 |
| HEPA Filter for MTX 150                                | 75005801 |
| HEPA Filter for MX 150+/120+                           | 50138434 |

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