

# Preventive maintenance for laboratory equipment

Help protect your laboratory equipment, maximize uptime, and increase equipment longevity



## On-demand services

### Boost equipment uptime with annual preventive maintenance

Preventive care is critical to the life and availability of your lab equipment. Without regular maintenance, unattended, lingering problems can decrease equipment performance and lead to unnecessary downtime and unplanned service costs due to unexpected failures. Protect your investment against the unexpected with regularly scheduled preventive maintenance (PM) that can proactively identify and resolve potential issues before they happen. Regular PM service will help ensure your equipment performs consistently and reliably throughout its life cycle, while protecting samples and enabling workflow efficiency. PM is recommended before all operational qualification (OQ) and requalification (RQ) service events to help ensure all tests pass within original equipment manufacturer (OEM) specifications.

When you choose Unity™ Lab Services for your preventive maintenance, you'll have peace of mind knowing your equipment is in the hands of factory-trained and experienced field service engineers that can help ensure:

- Optimal function and accuracy of equipment
- Increased likelihood of passing required OQ, temperature mapping, and/or cycle testing specifications
- Reliable performance and increased uptime throughout your equipment's life cycle

## What's included in equipment preventive maintenance?

During your PM visit, our engineers will perform routine inspections and standard procedures to ensure equipment performance is at or near the same level achieved at installation. While instrument models and applications can vary, typical PM procedures include overall general inspection and cleanup, replacement of worn parts, general performance testing, tuning, and more. Here's what you can expect from PM services on your equipment:



### Centrifuges and vacuum concentrators

We offer a versatile catalog of separation equipment to establish greater efficiency, precision, and reliability to the workflow for each of your applications. Our wide array of centrifuges and rotors can meet all your processing requirements and deliver outstanding performance that caters to your specific needs. Thermo Scientific™ Savant™ SpeedVac™ vacuum concentrators allow evaporation of concentrate and solvents through heat, centrifugation, and vacuum pressure, while ensuring sample integrity. Regular PM service will enable your equipment to perform predictably throughout its lifetime, ensuring sample protection and workflow efficiency. PM on a centrifuge or vacuum concentrator includes:\*

- Inspecting environment and general condition of equipment
- Ensuring the equipment is properly stabilized and safe for use
- Testing controls and setpoints for speed, temperature, runtime, and more
- Checking function of display and memory
- Inspecting vacuum solenoid, heater, thermal fuse, vacuum levels, oil levels, and function of vacuum pump (vacuum concentrators only)
- Inspecting voltage and electrical connections
- Checking compressor amperage and grounding resistance, if applicable
- Reviewing maintenance procedures with customer
- Reviewing past 12 months of technical data
- Applying recommended upgrades
- Recommending additional service as needed



### Constant-temperature incubators, ovens, and furnaces

Incubators and ovens are used to grow cell cultures, for heating or drying materials and samples, and in medical testing protocols. Furnaces are used in ashing applications, gravimetric analysis, and heating materials to temperatures up to 1,700°C. Regular PM service will help ensure your equipment continues delivering stable temperatures and reliable safety features. PM on a microbiological incubator, oven, or furnace includes:\*

- Inspecting and cleaning equipment
- Checking function of keypad, controls, and service menu
- Checking gas supply, pressure, and fittings, if applicable
- Inspecting internal gas lines and solenoid, if applicable
- Inspecting mounting hardware if stacked
- Inspecting electrical connections
- Checking function of audible and visual alarms
- Replacing door gaskets, blower motor gaskets, the blower wheel, sensor gaskets, and the thermocouple, as needed
- Reviewing maintenance procedures with customer
- Applying recommended upgrades
- Recommending additional services or equipment, as needed

\* PM services may vary by equipment and model.



### Controlled-environment CO<sub>2</sub> incubators and environmental chambers

CO<sub>2</sub> incubators are used to promote cell culture growth and are critical in applications that require precise modification of CO<sub>2</sub> levels and in reducing the risk of contamination. Environmental chambers protect samples during stability and shelf life testing, as well as in biological research by offering a combination of controlled lighting, humidity, air pressure, and gas. Regular PM service will ensure your equipment performs consistently and reliably throughout its life cycle to protect your samples and enable workflow efficiency. PM on an environmental chamber or CO<sub>2</sub> incubator includes:\*

- Inspecting environment and general condition of equipment
- Inspecting main voltage and power cord
- Inspecting and cleaning outer unit, as needed
- Inspecting inner chamber and components
- Replacing filters as needed
- Checking function of keypad, controls, service menu, and alarms
- Inspecting and cleaning condenser and evaporator coils
- Reviewing all maintenance procedures
- Reviewing past 12 months of service bulletins
- Applying recommended upgrades
- Recommending additional service as needed



### Cold storage, refrigerators, and freezers

Cold storage equipment is used in a variety of applications, including the short-term and long-term storage of chemicals, pharmaceuticals, and delicate biological materials. Regular PM service will keep your equipment running like new year after year, ensuring your system and its alarms are performing within acceptable tolerances to maintain the integrity of your most precious samples, like blood, plasma, stem cells, serums, and enzymes. PM on an ultra-low temperature freezer, cryogenic storage device, or high-performance refrigerator or freezer includes:\*

- Inspecting and cleaning equipment
- Checking function of keypad, controls, audible and visual alarms, and alarm relay contacts
- Inspecting remote monitoring recorder sensor, temperature sensor and probe, sensor bottle fluid levels, and guard
- Inspecting backup system supply line, connections, and temperature probe, as applicable
- Replacing alarm and backup system batteries
- Testing alarms and alarm contacts
- Inspecting liquid nitrogen (LN<sub>2</sub>) fittings, connections, hosing, and tubing, and ensuring LN<sub>2</sub> supply pressure is 22 psi on syphon tube tanks (exclusive to LN<sub>2</sub> cryogenic models and LN<sub>2</sub> backup systems)
- Reviewing maintenance procedures with customer
- Applying recommended upgrades
- Recommending additional services or accessories, as needed

\* PM services may vary by equipment and model.



PM is available for centrifuges, CO<sub>2</sub> incubators, environmental chambers, cold storage, biosafety cabinets, water purification systems, shakers, remote monitoring systems, and other laboratory equipment.



## Biosafety cabinets

Biosafety cabinets are required to meet safety compliance regulations to protect users, samples, and environments from potentially hazardous material. Annual maintenance helps ensure your Class II biosafety cabinet maintains optimal performance and meets compliance requirements.

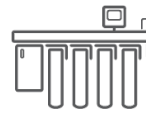
Unity Lab Services provides testing that fulfills applicable US and international standards. In North America, field certification is performed in accordance to NSF/ANSI 49 standards by accredited technicians. In Europe, verification of performance is provided according to EN 12469 safety standards.\* The maintenance and testing process includes the following procedures:\*\*

- Physical check and verification that the cabinet meets manufacturer's specifications
- Testing and resetting the airflow monitors and alarms
- Downflow velocity profile test
- Inflow velocity test and/or efficiency of front aperture
- Airflow pattern or smoke tests
- Site installation assessment
- KI-DISCUS™ test†
- Evaluating remaining HEPA or ULPA filter life; Installing replacement filters and performing leak tests as needed

\* Annual testing requirements differ by country. In accordance with EN 12469 standards, testing in Europe does not constitute an accredited service certification.

\*\* Annual service and testing is subject to variation depending on local best practices and requirements. Elective tests such as vibration, light intensity, and noise level measurements may be available on request.

† KI-DISCUS test is performed routinely only in the United Kingdom and Ireland and is optional elsewhere. For more information, please contact your Thermo Fisher Scientific service representative.



## Water purification systems

Pure water is elemental to the success of most laboratory applications. Water purification systems must be cared for properly to ensure that Type I and Type II water quality meets ASTM, ISO, and CLSI/CLRW standards. Our field service engineers will ensure your system is producing pure or ultrapure water with each use, adding a measure of assurance to your application. PM for a water system includes:

- Checking condition of water system and pretreatment system, if applicable
- Inspecting all connections (from the feedwater source to the final output) to check for leaks and excessive wear
- Inspecting hoses and O-rings
- Inspecting and replacing filters and cartridges (varies per model)
- Ensuring all controls, components, and accessories are operating correctly
- Checking feedwater and pure water for proper conductivity and resistivity
- Checking flow rate and water temperature
- Checking pressure at inlets and outlets
- Reviewing all technical service bulletins over the last 12 months
- Reviewing maintenance procedures with customer
- Applying recommended upgrades to the system
- Recommending additional services or equipment, as needed





### Shakers

Thermo Scientific™ MaxQ™ and Solaris™ shakers offer reliable, simple, and flexible shaking options for your application. Annual

PM will help ensure your shaker delivers outstanding performance, accuracy, and reproducible results throughout its lifetime, and includes:\*

- Inspecting safety clearance and stability of the equipment
- Inspecting electrical components, voltage, and power cord
- Inspecting doors, struts, interior surfaces, and all connections
- Checking airflow and replacing HEPA filter as needed (on incubated models)
- Replacing commonly worn parts
- Checking function of alarms, controls, and service menu
- Inspecting compressor components, refrigeration line, condenser, and evaporator (on refrigerated models)
- Reviewing maintenance procedures with customer
- Reviewing technical data in past 12 months
- Recommending upgrades and additional services or accessories, as needed



### Remote monitoring systems

Thermo Scientific™ Smart-Vue™ and Smart-Vue™ Pro wireless monitoring systems are designed to watch, safeguard, and log critical equipment data and will send out a notification in the

event of a system failure or power outage. It is critical to keep your system properly maintained to ensure the performance of the system and the safety of the samples that are stored inside the equipment. Annual PM on your Smart-Vue or Smart-Vue Pro monitoring system includes:

- Checking the operation of datalogger displays
- Inspecting sensors and power cables
- Replacing the battery in the datalogger
- Communication tests
- Checking firmware version on all dataloggers
- Ensuring sensor calibration is current and valid, and reviewing expiration dates of system license key and alert license key
- Reviewing alarm and datalogger reports in past 30 days
- Reviewing technical data in past 12 months
- Reviewing maintenance procedures with customer
- Recommending upgrades and additional services or accessories, as needed

\* PM services may vary by equipment and model.