

Centrifuge Service Checklist- 53 point check



Below is a list of minimum checks that a Henderson Biomedical engineer will perform during a service visit. This list is intended as a guide and is not exhaustive. Indeed, there may be other checks that the engineer carries out. Please note that some of the checks listed below cannot be performed on every model of centrifuge.

Visual inspection of the instrument and accessories

General inspection of the instrument

Check for signs of damage to the casing and abnormal noises

Initial checks

Ensure that the centrifuge has been properly decontaminated before work begins

This can be carried out by the engineer if the user has not done so already.

Check the display screen (LED, LCD, touch screen) is clear and free from any faults

Take a note of the user program settings for later reference

Check the centrifuge is located correctly

Check the centrifuge has been appropriately sited, e.g. not on the edge of a work bench or squeezed between other equipment

Functional checks

Verify the operation of the speed

Does it reach the required speed? Is it stable? Check with a calibrated tachometer if needed

Verify the operation of the brake

Do the different levels of braking work as they should be?

Verify the operation of the timer

Verification of the out-of-balance detection system

Carry out adjustments if necessary

Lid

Ensure that the lid lock is functional

Can the lid be opened whilst in use? Does the lid open button / latch work?

Inspect and lubricate hinges and lock
Adjust lid support hinges if required
Check the gas strut(s) are functional
Inspection of the lid seal if present

Inner bowl

Inspection of the inner bowl

Check for signs of impact damage from the rotor or buckets and also any signs of corrosion

Inspect the bowl seal and motor gasket if present

Is it corroded? Is it loose?

Motor

Visual inspection of the motor

Check for signs of wear and tear, loose cables and corrosion

Clear out carbon deposits from motor (brushed motors only). Inspect level of carbon brush remaining

Inspect the anti-vibration mounts for wear and tear

Carry out an insulation test

Inspect motor shaft

Is it straight or damaged in any way?

Lubricate motor shaft

Inspect condition of drive belt if present

Rotor, buckets and adaptors

Visual inspection of **all** rotors, buckets and adaptors

Check for signs of wear, damage, deformation and corrosion.

Ensure that rotor nuts and other securing devices are present

Inspect rotor lids and seals ('O' rings)

Specifically check for any signs of stress cracks on rotor

Clean and lubricate threaded components of the rotor and buckets

Clean and lubricate trunnions

Refrigeration

Visual inspection of the refrigeration system

Check for damage, deformation and corrosion of pipework

- Ensure that the instrument reaches the set temperature (+/- 2%) using calibrated thermometer
- Ensure the temperature is stable by comparing the display temperature with that of the thermometer
- Visual inspection of the temperature sensor within the rotor bowl
- Clean condenser of any accumulated fluff or debris
- Verify operation of the condenser cooling fan and motor
- Confirm the operation of the refrigeration system
- Verify condition of the drain hose and collection vessel

Electrical

- Visual inspection of electronics including the PCB
- Check for loose wires and/or connectors. Check the instrument is properly earthed*
- Do any of the components or cables show signs of burning?
- Electrical safety checks carried out using a Portable Appliance Test (PAT)
- Check panel indicators and switches are functional
- Verify integrity of the mains cable and plug
- Check all the keys on the keypad are working
- Ensure cooling fan is functional and clean if necessary

General housekeeping

- Ensure all nuts and bolts are properly secured
- Clean instrument
- Remove all expired and unnecessary labels. Remove adhesive deposits using label remover
- Ensure that Henderson Biomedical Service and Support sticker is placed somewhere visible on the instrument
- Complete service/calibration label sticker with date, serial number and engineer's initials
- Leave instrument with original programmed settings set by the user
- Inform the user of any remedial work and/or potential future problems (if any)
- Offer advice and/or tips on prolonging the life of the instrument