

**OFFICIAL SEED TESTING STATION
SEED TESTING LABORATORY, KEDL0100**

Standard Operating Procedure:

Equipment calibration & maintenance

SOP/GEN/13

Revision number 8

Issue date: 18th January 2023

**STANDARD OPERATING PROCEDURE FOR
EQUIPMENT CALIBRATION & MAINTAINANCE**

SOP/GEN/13

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Approved by:

Technical Manager

Quality Assurance Manager

Date:.....

Date:.....



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1.0 Purpose:

- 1.1 To maintain seed testing equipment in proper working condition in order to give reliable test results.

2.0 Scope:

- 2.1 All mechanical, electrical and routine maintenance services.
- 2.2 Routine and periodical equipment calibration.

3.0 References:

- 3.1 Digital data logger records
- 3.2
- 3.3 Daily calibration records for balances
- 3.4 Equipment manuals
- 3.5 Equipment maintenance records
- 3.6 Weekly calibration records/certificates
- 3.7 Job-cards/maintenance
- 3.8 ISTA reference materials
- 3.9
- 3.10 3.11 FORM FRM/STL/48
- 3.12

4.0 Definitions and Acronyms:

- 4.1 STL - Seed Testing Laboratory
- 4.2 ISTA - International Seed Testing Association
- 4.3 Equipment/machines - working and serviceable



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5.0 Responsibilities:

- 5.1 Technical manager: owner of the process on behalf of the Quality manager
- 5.2 Analyst in-charge: Monitoring, creating and maintaining records on equipment.
Report on equipment malfunction and calibration.
- 5.3 Seed Testing Laboratory: Request for schedule services, periodical calibrations, prompt repair.

6.0 A. Procedure for general equipment maintenance:

- 6.1 Take records of all operating equipments before using.
- 6.2 Study the records of the operating equipment and certify the operations.
 - 6.2.1 Remedy: if the records of the operating equipment do not satisfy the set operating requirements, it is immediately recorded as a malfunction.
- 6.3 Enter reported malfunction in the Laboratory and office equipment maintenance and repairs form (Form FRM/STL/37 – JOB CARD).
 - 6.3.1 Report malfunction to the Technical manager
- 6.3 The Technical manager calls for service directly from the relevant approved supplier or through Supplies department at the KEPHIS headquarters.
- 6.4 The service provider gives the examination report and proceeds with repairs and service required.
 - 6.4.1 Form FRM/STL/38 – JOB CARD 1 is filled when an item/parts is to be carried for repair/ service outside the Seed Testing Laboratory.
- 6.5 If the service/repairs are done to the satisfaction of the officer in-charge, he confirms in Job card form and signs.
- 6.6 The service agent raises a service invoice, which is signed by the officer in-charge.



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- 6.7 The Technical manager confirms the service/repairs done by the service agent and endorses the invoice for payment.
- 6.8 Check and re-calibrate repaired equipment before using/putting back into service.
- 6.9 Seed Samplers/Analysts will be authorized to operate laboratory equipment using form FRM/STL/58

B. Repair and service acceptance criteria

1. Follow 'procedure A' above for equipment repair and maintenance
2. Check, recalibrate the repaired equipment.
3. Accept service when the measurements are within range.
4. If measurements are out of range, reject the service.
5. Inform the official seed tester.

7.0 Maintenance schedules

7.1 All equipments which need servicing will be maintained through a predetermined schedule (FRM/STL/53)

8.0 Calibration

- 8.1 All equipments requiring internal calibration must be calibrated before use (refer to the relevant Sops for sections where such equipments are located).
- 8.2 All equipments listed in Appendix E1 and E2 requiring external calibration will be calibrated by an external calibration body once a year and a calibration schedule of the same has to be maintained(refer to Form FRM/STL/48)

9.0 Records:

- 9.1 Digital Dataloggers logs
- 9.2 Daily balance calibration charts and certificate
- 9.3 Job card form (FRM/STL/37)
- 9.4 Equipment database
- 9.5 Equipment calibration schedule (FRM/STL/48)



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10.0 Flowchart:

10.1 Flowchart for equipment maintenance

10.2 Flowchart for calibration



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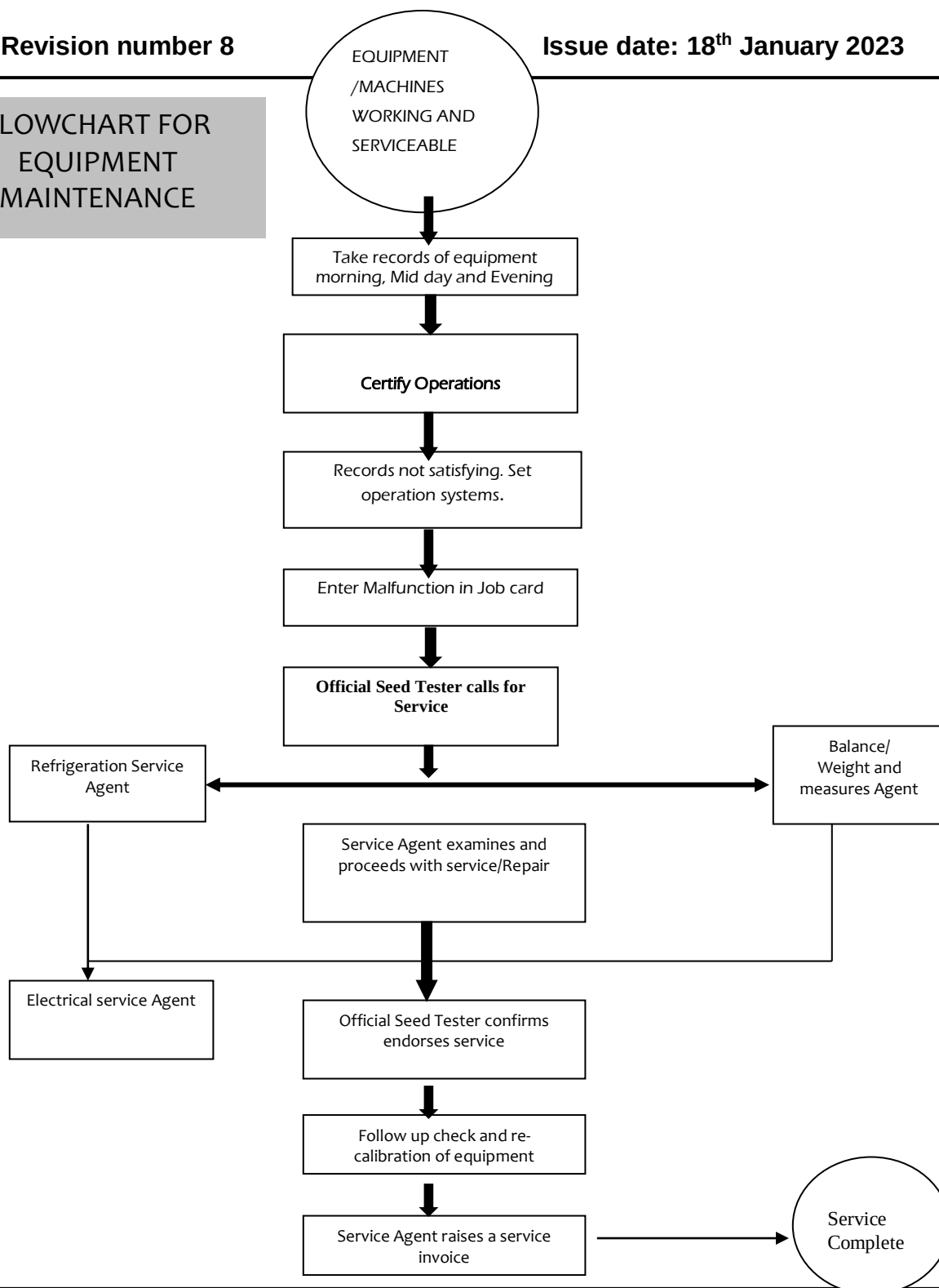
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FLOWCHART FOR EQUIPMENT MAINTENANCE



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10. Appendices

Appendix E1: List of Equipments used in the Seed testing Laboratory

Appendix E2: List of Equipments used in Sampling

11. Forms on equipment calibration

- a) Job card (FRM/STL/37)– see below
- b) Job card 1(FRM/STL/38) – see below
- c) Equipment calibration schedule (FRM/STL/48)
- d) Maintenance schedule (FRM/STL/53)

