

0 INTRODUCTION

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[This edition completely replaces all previous editions.](#)

The term “**Dassault Aviation Business Services SA**” will be use during any Part 145 activity such as on/within Maintenance Work Package, Purchase Orders, invoices, Certification, approved manuals and procedures. The term “**DABS**” will be use in this PROCEDURE.

0.2 Purpose

This procedure describes the entire process for tools and equipment calibration/inspection. It is to ensure that any maintenance operation that needs calibrated equipment has been performed appropriately.

0.3 Applicability

This procedure is applicable to all personnel in contact with calibrated tools and equipment in the maintenance department (Tools supervisor, Tools staff and Managers).

0.4 References

- Regulation: Part 145
- MOE
- Samples of labels and stickers (DA-0126)
- Calibration/inspection report (DA-0127).

0.5 Abbreviations and definitions

- **AMO** Approved Part 145 Maintenance Organisation
- **Quantum (QTM)** Software used in maintenance to record, issue and track all maintenance works performed in DABS AMO

Calibration

It is a set of operation to verify the values/data obtained by comparison of two instruments or measuring devices (one of which is a standard of known accuracy Traceable to national standards).

It is used to detect, correlate, report or eliminate any of the discrepancy in accuracy of instruments or measuring devices when being compared to the standard.

Operation that, under specified conditions, in a first step, establishes a relation between the **quantity values** with **measurement uncertainties** provided by **measurement standards** and corresponding **indications** with associated measurement uncertainties and, in a second step, uses this information to establish a relation for obtaining a **measurement result** from an indication.

*NOTE 1: A calibration may be expressed by a statement, calibration function, **calibration diagram**, **calibration curve**, or calibration table. In some cases, it may consist of an additive or multiplicative **correction** of the indication with associated measurement uncertainty.*

*NOTE 2: Calibration should not be confused with **adjustment of a measuring system**, often mistakenly called “self-calibration”, nor with **verification** of calibration.*

Maintenance preventive/ service

Maintenance at appropriate intervals to prevent malfunction & shall be “preventative” not “reactive” maintenance.

"It is a care or service provided by personnel to maintain the equipment or facility in satisfactorily working conditions by providing inspections, detection and correction of failures before they occur. Basically they are conducted to keep the instrument in working conditions and to extend the life of the instrument

1 GENERAL

Personnel of the tools department have to review periodically the content of this and related procedure in order to keep current with any changes. Personnel are encouraged to contact the Quality department with concerns regarding the interpretation of this document.

The procedures described shall not conflict with those contained in the MOE. If for any reason a conflict occurs, the procedures described in the MOE shall be followed.

1.1 Responsibility

The Tools Supervisor is responsible to ensure the following:

- Maintaining database of tools and equipment in Quantum.
- Ensuring that Tools and Equipment used are testing / inspecting / calibrating at time.
- Maintaining the **Calibration/inspection history report** (DA-0127) for each Tool/Equipment
- Issuing the **Calibration/inspection Due List** at the beginning of each month.
- Performing incoming inspections following calibration/inspection.
- Issuing **Due Label** and sticking the Tools and Equipment.
- Conditioning the Tools and Equipment prior and after use.

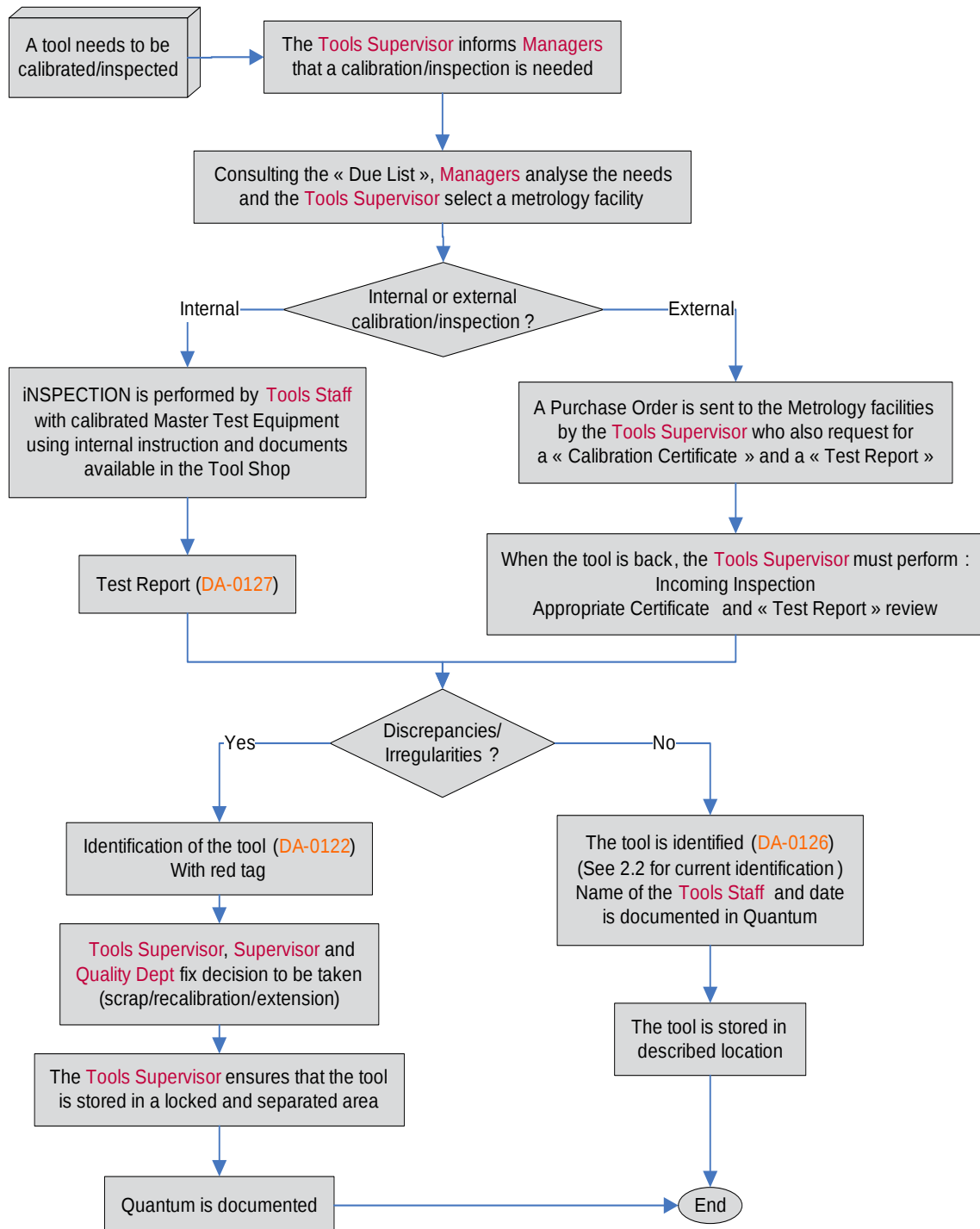
At no time will any person be permitted to perform work on product using measurement or test equipment that is out of calibration or due for inspection. (except in case of extension – §2.4)

All personnel, before using equipment are responsible to check that the equipment has a current due label attached.

2 PROCESS

2.1 General

The diagram below describes the general calibration process.



*Red words are used for personnel
Orange is used when it refers to a DABS document.*

2.2 Identification

Status	Description	Identification Type
VERIFICATION	The equipment is verified before and/or during every use	CHECK BEFORE USE or CHECK DURING USE Verification process is described in the identification sheet
CALIBRATION Or INSPECTION	CALIBRATION : The equipment must be calibrated using internal procedures or by subcontractors INSPECTION : The equipment is controlled and inspected internally or by subcontractors according to the manufacturer	 OR  The « cal. » box or « insp. » box is ticked depending on the case
UNCALIBRATED	The equipment is not subject to calibration or inspection	NOT CALIBRATED FOR TROUBLESHOOTING ONLY Or NOT CALIBRATED FOR INDICATION ONLY Or FOR INDICATION ONLY Or FOR INFORMATION ONLY Or FOR INFO ONLY

2.3 Records/Retention

Status of tools/equipment is described, using the following statements:

ITEM STATUS	Description
CURRENT	The equipment is in working condition
REPAIR	The equipment is in repair.
CALIB	The equipment is in calibration.
RENTAL	The equipment is rented, locally (JET, etc), or externally - include :LOAN, JET on 10.10.2030
AS REMOVED	Equipment IS IN QUARANTINE WAITING FOR CUSTOMER DECISION
QUARANTINE	Equipment to destroy, obsolete or more.
HOLD LINE	Equipment awaiting DABS decision.
SCRAPPED	The equipment is unusable, it is destroyed.

A **Due List** is monthly established with Quantum by the Tools Supervisor. This list is dispatched to the appropriate manager. The **Calibration Test report** and **Calibration Certificate** /or **Certificate of Conformity** must be recorded in the calibration history file kept in Tools Shop.

2.4 Interval for Calibration/Inspection

The bases for intervals for Calibration / Inspection / Service of Tools/Equipment and GSE are:

- The manufacturer's Recommendations or
- Industry Standard Practices i.e. every 12 months.

Due date for inspection, calibration and preventive maintenance is extended to the end of the month.

Inspection, Calibration could be anticipated for 1 month without change in next due date.

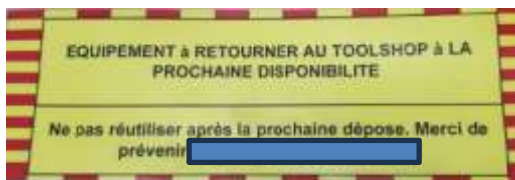
In case of preventive maintenance/service, operations could be anticipated for 2 months without change in next due date.

2.5 Extension

In case of Tools or Equipment are not returned for calibration / inspection / service because in used, an extension could be accepted if assessed by the **Tools department** and the **management** and accepted by the **SQ department** and recorded in appropriate form (DA-0127_assessment).

Periodicity and Control intervals could be escalated based on variations depending on frequency of utilisation and/or normal industry standard. A written authorisation should be obtained by the manufacturers in case of calibration (not required for inspection).

When extension is used, new Due label should be issued, and a Tag should be attached to the equipment



3 SELECTION OF THE METROLOGY PROVIDER

The Tools and Equipment must be sent to service provider described in the list of accepted metrology provider (DA-0104). The **Purchase Order** issue for the calibration must state the requirement for a **Calibration Certificate** and a **Test Report**.

3.1 Using of the metrology provider

Tooling are be calibrated in a test laboratory accredited or using the original tool manufacturer

- **Accredited laboratories**

Tooling are be calibrated in a test laboratory accredited to the ISO/IEC 17025 standard, by an accreditation body acceptable to the European Aviation Safety Agency.

Only a laboratory accredited by an "Accreditation body" which is signatory of the ILAC MRA is considered acceptable, considering that in this case traceability through the assessment and accreditation process under ISO/IEC 17025 has already been established.

- **Original tool manufacturer**

A maintenance organisation using the original tool manufacturer identified in the approved maintenance data for calibrating/testing the related tool is considered as acceptable provided the calibration certificate issued refers to ISO/IEC 17025 standard.

Note: inspection, maintenance preventive could be performed by a qualified provider (not laboratory) listed on metrology list.

3.2 Calibration method

In order to comply with Part-145.A.40 (b) the maintenance organisation shall ensure that:

- (a) tooling are periodically calibrated in accordance with the manufacturers' published standards and recommendations.
- (b) where no recommendations for calibration are published or where the calibration methods or standards are not specified, calibration is carried out in accordance with the requirements of the ISO 10012. This standard details both the generic requirements and guidance for the implementation of measurement management systems.

3.3 Incoming inspection of document

Particular attention shall be placed on the documents received with the calibrated tools. This document shall include a minimum of information such as, but not limited to:

- Identification of the Accredited Laboratory (traceability to ILAC accreditation);
- Traceability of measurements and calibrations to officially recognised standards;
- Standard used for the specific calibration (i.e. EN/ISO 837-1 for the calibration of pressure gauges);
- Test results;
- Identification of specific method undertaken, results of measurement, details of the persons performing the calibration including authorisation details, etc...;
- Evaluation of the calibration results to verify if within acceptable limits.

Note: Except for alternate tooling, a tool delivered new only with the certificate of conformity issued by the original manufacturer does not need additional calibration unless otherwise indicated by the manufacturer.

3.4 Required data in certificate

The certificate shall include the following information:

- The name
- The accreditation certificate number of the company (except if the company is the manufacturer)
- The DABS reference of the tools / equipment
- The date of measurement/calibration/preventive maintenance
- The environmental conditions
- The measurement/calibration/result
- The measurement uncertainty (in case of calibration)
- The details of procedure/standard used to control the Equipment/Tools
- The reference standard(s) used to control the Equipment/Tools
- The evidence that reference standard(s) used are traceable to the SI
- The description of findings/non conformities found during incoming inspection
- The description of appropriate corrective actions taken and implemented
- The indication that the equipment/Tools calibrated is conform for purpose
- The name of the personnel performing the calibrations/measurement

The provider will not enter due date for next calibration that is the responsibility of DABS.

3.5 Calibration in non-accredited laboratories

The maintenance organisation may need to send tooling to the manufacturer. Traceability through an assessment/questionnaire should be established.

Therefore, the maintenance organisation shall demonstrate the technical competences through a questionnaire that shall at least include the following criteria:

- traceability of measurements and calibrations to officially recognised standards;
- appropriate testing environment;
- technical competency of staff including qualifications and experience;
- validity and appropriateness of the methods;
- use of suitable test equipment that is appropriately calibrated and maintained;
- accurate recording and reporting of data;
- quality control procedures.

In exceptional cases, the maintenance organisation may need to send tooling for calibration to a laboratory/company which is not accredited.

Therefore, the maintenance organisation shall assess the need to use a non-accredited laboratory and communicate with the NAA for acceptance;