

C.A.S.E.
AIR CARRIER SECTION
Guidance Checklists

Tooling Calibration
Guidance Checklist

Audit Date: _____ Vendor Allocation #: _____

C.A.S.E. Member #: _____ Auditor: _____

Vendor Name: _____

U.S./Canadian Certificate #: _____ EASA Certificate #: _____

Expiration Date: _____

Address Line 1: _____

Address Line 2: _____

City: _____ State/Province: _____

Country: _____ Zip code: _____

Website: _____

Accountable Manager: _____

Personnel Contact:

Name	Title
1. _____	_____

2. _____	_____
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Phone #: 1. _____ Phone #: 2. _____

E-mail: 1. _____

E-mail: 2. _____

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NOTE: This checklist is presented as a convenience tool for use at the auditor's discretion. It was designed for use at a facility whose primary function involves the calibration of precision tooling. It was **not designed** for use at a FAA 145 Repair Station.

The following technical data was used to update this checklist.

1. ANSI Z540-1, SR 2401 & SR 2402 – Calibration Laboratories (Non-Forensics)
2. ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories
3. MIL-STD-45662 – Guide to Calibration
4. FAR – Title 14 CFR Part 145, Section 109

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Quality Control/Documentation	<u>YES</u>	<u>NO</u>	<u>N/A</u>
1. Does the laboratory have an established quality program and is the program appropriate to the type, range, and volume of calibration activities? [Operational Certificates: ANSI, ISO, MIL-STD, FAR]	_____	_____	_____
2. Does the current quality manual state the laboratory's policies and operational procedures for: [Obtain a copy]	_____	_____	_____
a. Establishing and changing calibration intervals?	_____	_____	_____
b. The technique used for determining measurement uncertainty and calibration/verification adequacy?	_____	_____	_____
c. Achieving traceability of measurements?	_____	_____	_____
d. Calibration, verification, and maintenance of equipment?	_____	_____	_____
d. Address out-of-calibration condition?	_____	_____	_____
e. Is the manual readily available to laboratory personnel?	_____	_____	_____
3. Where appropriate, does documentation identify the person, by title, responsible for the:	_____	_____	_____
a. Quality program?	_____	_____	_____
b. Inspection system?	_____	_____	_____
c. Internal calibration systems?	_____	_____	_____
d. Technical documentation (manufacturer's calibration procedures, customer requests, and instructions)?	_____	_____	_____
e. Shelf-life limited items?	_____	_____	_____
f. Scrap (disposition of unusable parts)?	_____	_____	_____
4.. Does the vendor have an active internal audit and surveillance function?	_____	_____	_____

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a. Are internal audit results documented, and do they include non-compliance corrective action items? _____

YES **NO** **N/A**

5. Does the documented corrective action system include a preventative action system with follow-ups that notify clients whose work may be affected? Are those systems effective? _____

Personnel Training

6. Does the vendor have a sufficient number of trained and experienced personnel to conduct the calibrations being performed? _____

7. Does the vendor have an active training program that documents formal and OJT activities? _____

8. Are records on the qualifications, training, skills, and experience of the technical personnel current and available? _____

Measuring and Test Equipment (Stds/Refs Material)

9. Does the laboratory have a tool calibration program? _____

10. Are all equipment used for calibration activities being properly maintained/calibrated per documented procedures and identified to indicate their calibration or serviceability status? _____

11. Is the overall calibration program designed and operated so as to ensure the measurements made by the laboratory are traceable to national, international, or intrinsic standards of measurement? _____

12. Are precision tools and instruments stored in a manner that prevent damage and not affect calibration? _____

13. Do records:
 a. Identify equipment? _____

b. Show date calibrated and calibration due date? _____

c. Identify individual/vendor that performed calibration? _____

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d. Reflect P/N and S/N of standard/reference material used to perform the calibration? _____|_____|_____

YES **NO** **N/A**

e. Have a certificate for each item calibrated by an outside agency? _____|_____|_____

f. Reveal details/history of adjustments and repairs? _____|_____|_____

g. Indicate calibration interval? _____|_____|_____

14. Is the calibration recall system effective? _____|_____|_____

Work Processing

15. Does the laboratory have all the necessary equipment (including reference material) required for the correct performance of calibration/verifications being requested? _____|_____|_____

16. Upon receipt of an item, is the item inspected and any miss-handling, storage, or transportation problems recorded on the work instructions? _____|_____|_____

17. Does the laboratory have a documented procedure to consult with the customer whenever:

a. There is any doubt as to the item's suitability for calibration? _____|_____|_____

b. The calibration required is not fully specified? _____|_____|_____

c. The item does not conform to the description provided? _____|_____|_____

d. The calibration is to be sub-contracted? _____|_____|_____

18. Do documented calibration procedures conform to established standards, and:

a. Identify equipment to be calibrated by manufacturer, model number, etc.?
_____|_____|_____

b. Identify applicable measurement standards and test accuracy requirements?
_____|_____|_____

c. List the acceptable tolerance for each instrument parameter being calibrated?
_____|_____|_____

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- | | <u>YES</u> | <u>NO</u> | <u>N/A</u> |
|---|------------|-----------|------------|
| d. Include sufficiently detailed calibration instructions and documentation results? | _____ | _____ | _____ |
| e. Provide an acceptable test accuracy ratio between measurement standards and the instrument being calibrated? | _____ | _____ | _____ |
| f. Identify any unusual environmental control requirements and adequate compensation and/or corrections to be applied in instances where the defined environmental conditions cannot be met? | _____ | _____ | _____ |
| 19. Does the vendor employ a sub-contractor for any part of the proposed calibration? | _____ | _____ | _____ |
| 20. If yes, can the vendor demonstrate that its sub-contractor is competent to perform the activities in question by producing details of its vendor approval (normally a checklist similar to this)? | _____ | _____ | _____ |
| 21. Does the laboratory have a list of all its approved sub-contractors and their approved specific activities? | _____ | _____ | _____ |

Facilities Operations Environment

- | | | | |
|--|-------|-------|-------|
| 22. Is the vendor’s facility adequately equipped to perform the requested work (lighting, storage, working space, etc.)? | _____ | _____ | _____ |
| 23. Are all appropriate environmental conditions being effectively monitored, controlled, and recorded? | _____ | _____ | _____ |
| 24. Are good housekeeping practices being exercised? | _____ | _____ | _____ |

Records

- | | | | |
|--|-------|-------|-------|
| 25. Are all records pertaining to calibrated equipment stored secure and held in confidence for the customer for the period specified in the quality manual? | _____ | _____ | _____ |
|--|-------|-------|-------|

Certificates and Reports

- | | | | |
|---|-------|-------|-------|
| 26. Does each certificate or report include at least the following: | _____ | _____ | _____ |
| a. A title, e.g. “Calibration Report,” “Certificate of Calibration” etc.) | _____ | _____ | _____ |

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- | | | | | |
|----|---|-------------------|------------------|-------------------|
| b. | Vendor's name, address, and phone number? | _____ | _____ | _____ |
| c. | Unique identification (i.e. serial number) of the certificate or report on each page, and total number of pages? | _____ | _____ | _____ |
| | | <u>YES</u> | <u>NO</u> | <u>N/A</u> |
| d. | Name and address of customer? | _____ | _____ | _____ |
| e. | A clear description and identification of the item calibrated? | _____ | _____ | _____ |
| f. | Condition of calibrated item as received? | _____ | _____ | _____ |
| g. | Date when calibration was completed, and next calibration due date? | _____ | _____ | _____ |
| h. | Identification of the calibration procedure, including: | | | |
| | 1. Modification to the procedure? | _____ | _____ | _____ |
| | 2. Standard used, including date status of standard? | _____ | _____ | _____ |
| i. | Sampling procedure, if used? | _____ | _____ | _____ |
| j. | Calibration results? | _____ | _____ | _____ |
| k. | A statement of the estimated uncertainty of the calibration results? | _____ | _____ | _____ |
| l. | The person's signature and title who accepts responsibility for the certificate or report contents? | _____ | _____ | _____ |
| m. | The certificate's or report's date of issue? | _____ | _____ | _____ |
| n. | Where relevant, a statement to the effect that the results related only to the items calibrated? | _____ | _____ | _____ |
| o. | A statement that the certificate or report shall not be reproduced, except in full, without written approval from the vendor? | _____ | _____ | _____ |
| p. | Special limitations of use? | _____ | _____ | _____ |
| q. | A statement providing traceability to a recognized source (i.e. National Standards Laboratory of a country)? | _____ | _____ | _____ |

Shipping

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27. Are tools and/or test equipment returned in an appropriate shipping container, or as specified by the customer? _____|_____|_____

YES **NO** **N/A**

28. Does the vendor verify that the identifying data (P/N, S/N, nomenclature, model no.) on the certificate/report coincides with the tool/test equipment being shipped? _____|_____|_____