

Perform Air International Inc.

Quality Control Manual

Section II

Procedure: II.08 Control of Monitoring and Measuring Equipment Procedure

Revision	Revision Date	Revision Change
N/I	02/08/2010	Initial Release/Re-release
1	12/31/2010	Revision to 3.0, 5.1.2, 5.2.1.2, 5.3.1.3, 5.3.1.5, 5.4.1, and 5.4.5, - Responsibility change, 5.2.1.2 – grammar correction, and 6.2 and 6.3 - removal of location.
2	05/20/2011	Repagination of 5.1 thru 5.8.3 for consistency of format. Revision to 3.0 and 5.8.1 for title change. Revision to Header, 3.0, 5.2.1.2, 5.2.1.2.1, 5.4.1, 5.4.6, 5.7 and 5.8 thru 5.8.3 for grammar.
3	03/30/2012	Revision to 3.0, 5.2.1.3, 5.3.1.1, 5.3.1.4 and 5.4.2.
4	02/28/2013	Revision to 3.0 for change of backup position.
5	07/01/2013	Pagination of 3.0 Responsibility for consistency of format. Addition of 3.1, 3.3 thru 3.8 for clarification of responsibility. Restructure of procedure for process improvement and clarification of departmental duties resulting in repagination of 5.1.1.1 thru 5.1.8, 5.2.1.1 thru 5.2.1.2, 5.3.1.1 thru 5.3.1.7, 5.4 thru 5.6.4, 5.7.1 thru 5.7.3.1. Addition of 5.8 thru 5.8.1.2.1. Removal of 5.5.1 thru 5.5.2. Addition of 6.4 and 6.5.
6	03/31/2014	Removal of 3.6, 3.9 and 5.1.3 resulting in repagination of 3.6 thru 3.9 and 5.1.3 thru 5.1.7. Revision to 3.2, 5.1.3, 5.3.1.1, 5.3.1.2, 5.3.1.5, 5.3.1.6, 5.5.1, 5.6.2 and 5.6.4 for clarification of responsibility.
7	12/01/2014	Addition of 5.7, 5.7.1 and 5.7.2.
8	03/31/2017	Revision to 3.4 for title. Revision to 3.6, 5.1.1, 5.1.6, 5.2.1.2, 5.3.1.5 for clarification. Revised 5.8.3.1 for title change.
9	11/30/2017	Remove 3.5 and renumerate paragraph
10	08/17/2018	Revision to 3.4, 5.3.1.5 and 5.3.1.6.
11	02/28/2019	Revision to 3.4, 3.6, 5.1.5.4 and 5.9.
12	01/31/2020	Revision to 5.2.1.1.
13	05/31/2020	Revision to 3.8 and 5.1.1.3 and delete 5.6 to remove all references to personally owned calibrated tools.
14	01/31/2022	Revision to 5.8.1
15	10/31/2023	Revision to procedure, change to responsible dept and management
16	06/27/2025	<i>Revised 5.3.1.6 change to responsible department personnel</i>

1.0 Purpose:

Equipment shall be used in a manner that ensures the measurement uncertainty is known and consistent with the required measurement capacity.

2.0 Scope:

All inspection, measuring, and test equipment shall be controlled, calibrated, and maintained in accordance with regulatory requirements and the International Standard Organization ISO 9001 as revised, to demonstrate the conformance of product or specified requirements.

3.0 Responsibility:

3.1 The maintenance of this procedure is the responsibility of the Executive Vice President of Operations.

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- 3.2 The Metrology Department is responsible for the calibration program of the repair station, including notification of items due to the Planning Department. It is the responsibility of the Executive Vice President of Operations to determine the items that require calibration and ensure those items have been added to the calibration program. The Planning Department is also responsible for pulling the inventory due for calibration.
- 3.3 The Executive Vice President of Operations is responsible for ensuring in-house calibration of calipers and micrometers is performed by a qualified individual.
- 3.4 The Metrology Department will be responsible for maintaining the calibration records database per the certifications provided. The Quality Assurance Department will save hard copies of the certs.
- 3.5 The Planning Department is responsible for maintaining the Calibration inventory within the Planning cage. Planning personnel will check tools out to maintenance personnel when needed using the Calibration Tool Checkout form. It is the responsibility of the Planning personnel to follow up with maintenance to ensure the tool is returned daily. If the tool is still needed for maintenance, the Planning personnel will update the check-out sheet.
- 3.6 It is the responsibility of all maintenance personnel to verify calibration status of calibrated equipment prior to use.
- 3.7 It is the responsibility of the Training Department, at indoctrination, to inform all employees that personally owned calibrated tools are not permitted.

4.0 Definitions:

- 4.1 **Calibration:** The act or process of calibrating or the state of being calibrated. A set of graduations that show positions or values.
- 4.2 **Monitoring and Measuring Devices:** All measurement equipment that is used in the evaluation of acceptance based on specific criteria. These devices include test hardware, test software, automated test equipment, and plotters used to produce inspection data. It also includes personally owned and customer supplied equipment used to provide evidence of product conformity.

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5.0 Procedure:

5.1 Calibration Intervals and Records Maintenance:

5.1.1 Perform Air International Inc. uses a calibration records database to track calibration intervals and maintain certification records. Excluding gauge blocks, which may be placed on a two (2) year schedule, all items in the calibration system are to be calibrated on an annual basis unless an exception applies. These intervals are based upon manufacturers and standard industry practice. All items are maintained in the program and in hard copy form from the organization performing the calibration.

5.1.1.1 The program properly identifies each piece of equipment and records the date of calibration.

5.1.1.2 The program includes the following information: equipment type, unique identifier, and location within the repair station.

5.1.1.3 All items used at Perform Air International Inc. whether they are company owned, vendor leased, or customer owned, are maintained within the Perform Air International Inc. Calibration Program.

5.1.2 The Metrology Department completes a computer-generated calibration report during the first week of each month. This report indicates what items within the Perform Air International Inc. quality system require calibration and the current expiration date of each item.

5.1.3 After the Metrology Department has removed the items due for calibration. The Metrology Department will segregate in house Calibrated tools from Outside Service calibrated tools. In-house calibrated tools are sent to the Metrology Lab. Outside Service tools are sent to a Sub-Contractor. Metrology will submit an Outside Service Requisition to the Repair Administrator to generate a purchase order for repair.

5.1.4 All new gauges or items that require calibration will be reviewed at incoming inspection. A determination will be made at that time if calibration is required.

5.1.4.1 If calibration is required, an Outside Service Requisition will be submitted by the Metrology Department.

5.1.4.2 If calibration is not required, the item will be marked, "For Reference Only," by inspection personnel prior to release to the Maintenance Department. Any item marked "For Reference Only" must incorporate a calibrated piece of equipment to obtain measurements for verifying compliance to test parameters.

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5.1.5 The Metrology Department will review the results of calibration at the time calibrated equipment is received whether the equipment is calibrated in-house or at a sub-contract vendor. The records shall:

5.1.5.1 Show the date the item was calibrated or checked.

5.1.5.2 Show the date the next calibration is due.

5.1.5.3 Identify the individual or vendor that accomplished the calibration or check.

5.1.5.4 Contain a certification of calibration for each item calibrated.

5.1.5.5 Include details of any adjustment or repair required.

5.1.5.6 Identify the standard, including part number and date due, used to calibrate the tool.

5.1.6 The Metrology Department will update the calibration records database to indicate the item(s) that are currently in calibration and record the date of calibration and scheduled due date for next calibration. Newly purchased items will be added to the program upon determination of calibration requirement.

5.1.7 If at any time a calibrated item inadvertently exceeds the calibration due date, becomes damaged or inoperative the item will be removed from service until the equipment is repaired and / or a calibration check is performed.

5.2 In-House Calibration:

5.2.1 Perform Air International Inc. may conduct in-house calibration of several items within the repair station.

5.2.1.1 At the time of calibration, the Metrology Department will attach an updated calibration label to the item(s) being calibrated. The label identifies the unit by the PAI asset number, last calibration date and next calibration date. After calibration has been completed, certification will be completed by use of the Perform Air International Inc. Calibration Certificate.

5.2.1.2 The item will then be released to the Planning Department for return to service.

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5.3 Sub-contractor Calibration:

5.3.1 Measurement equipment used within the Perform Air International Inc. quality system that cannot be calibrated in-house is sub-contracted to a calibration company compliant to National Institute of Standards and Technology (N.I.S.T.) standards.

5.3.1.1 A list of items requiring calibration is printed by the Metrology Department for removal of service.

5.3.1.2 A Repair Order is created, and the database is updated to indicate the item(s) currently at calibration.

5.3.1.3 At the time of calibration, the subcontractor will attach an updated calibration label to the item being calibrated. The label will identify the unit by a minimum of the asset or serial number, last calibration date and next calibration date.

5.3.1.4 Any facility performing the calibration of Perform Air International Inc.'s equipment / tooling will have standards traceable to the N.I.S.T.

5.3.1.5 After calibration, the item will be checked for proper labeling and certification. The Metrology Department will update the calibration records database with current calibration dates, store calibrated Certifications electronically and forward the hard copy to the Quality Assurance department for filing.

5.3.1.6 The item will then be released to the Planning Department for return to service. *Metrology personnel* will update the location in the calibration database.

5.3.1.7 If, at any time, the label becomes illegible or comes off prior to the calibration due date, the Metrology Department may re-label the equipment.

5.4 Testing of Equipment Utilizing Calibrated Tooling:

5.4.1 All repair station personnel are responsible to check the item to determine if a current calibration label is attached. At no time will any person be permitted to perform maintenance on components using test equipment that is missing a calibration label or is out of calibration.

5.4.1.1 All calibrated equipment is identified within the Perform Air International Inc. quality system with a unique identifier on the label and in the database. Each Component Repair Worksheet will have the equipment used to determine acceptance recorded.

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5.4.1.2 If an item is out of calibration beyond the limits set within this procedure, or if an item is suspected of having become out of calibration and proven to be so, then all items that were determined acceptable per that piece of equipment back to the last known calibration date will be recalled.

5.5 Label:

5.5.1 If a label is damaged or illegible, the maintenance/inspection personnel will relinquish the tool to the Planning Department. The Planning Department will advise the Metrology Department, who may issue a replacement label.

5.6 Quality Control Tools:

5.6.1 The Quality Control Department will maintain independent tooling in the Quality Control location. This tooling will be used to facilitate an independent measurement analysis.

5.6.2 The Metrology Department will be responsible for maintaining calibration with the same controls and calibration requirements of this manual.

5.7 Variances:

5.7.1 If the calibration record reflects a discrepancy of more than five percent (5%) of normal tolerances, the Metrology Department will review the previous record. Upon review, the piece of equipment will be placed on a calibration interval of six (6) months.

5.7.2 Exception 1:

5.7.2.1 At the time of re-calibration, if the unit again is out of tolerance by five percent (5%) or more, the unit in question will be removed from service and disposed of by the Metrology Department.

5.7.2.2 If the piece of equipment is found to be within normal tolerance after the six-month interval, the unit in question will be returned to normal service.

5.7.2.3 In the event that calibrated equipment is found to be out of tolerance by more than 20%, the equipment will immediately be removed from service. All maintenance performed using the equipment out of tolerance will be identified and the affected customers will be notified with recall options.

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5.7.3 Exception 2:

5.7.3.1 In the event a calibrated item is found to be in tolerance for two annual intervals, the item may be extended for 30 days for next scheduled calibration interval. If the item is in tolerance at the 13-month interval, it may be extended an additional 30 days. This process may continue with a “not to exceed” interval of 18 months or the manufacturer’s recommended calibration interval, whichever is less. Only specific tools approved by the Accountable Manager or designated representative may be extended under this exception. The decision will be based upon the type of tool, its intended use, and the frequency of use.

5.8 Items Removed From Service:

5.8.1 In the event a tool is lost or damaged, it will be removed from service. Metrology will update the information in the Calibration Database.

5.8.1.1 When an item is lost, the Metrology Department will notify Quality Assurance to ensure the certification documentation is removed from the active files and archived.

5.8.1.2 When an item is damaged the Metrology Department will complete a Calibration Certificate which will depict the removal of the tool from service. The certificate will be forwarded to Quality Assurance for filing. When an item is deemed BER at a vendor, the vendor BER/Red Tag certificate is acceptable in lieu of a Calibration Certificate created in-house.

5.8.1.2.1 Once Quality Assurance has received the “red-tagged” certificate from Metrology, all documentation will be removed from the active files and archived.

6.0 Records:

- 6.1** Calibration record from Sub-Contract Vendor (N.I.S.T. Traceable)
- 6.2** Component Repair Worksheet (Form PAI3001A)
- 6.3** Calibration Certificate (Form 63.10)
- 6.4** Outside Service Requisition (Form 55.04)
- 6.5** Calibration Tool Checkout (Form 55.01)