Standard Operating Practice

S.O.P. No. 52-10-007.0-00-004

FIRST ARTICLE INSPECTION REQUIREMENTS FOR PURCHASED PARTS (Excluding Forgings and Castings)

1.0 PURPOSE

To establish a First Article Inspection procedure and define requirements for Product suppliers.

2.0 SCOPE

This document states that a First Article Inspection (FAI) must be performed to verify dimensional and test requirements detailed on the part drawing and related specifications. The part for First Article Inspection shall be manufactured from production tooling and processes. All purchase orders shall indicate first article requirements. Last Article Inspection (LAI) if required, will be communicated via the purchase order as well.

3.0 APPLICABLE DOCUMENTS

QCP 5.4	SOURCE INSPECTION
QCP 5.5	CERTIFIED SUPPLIER PROGRAM
QCP 7.2	FIRST ARTICLE INSPECTION
SAE AS9102	AEROSPACE FIRST ARTICLE INSPECTION REQUIREMENT
ARG-1072	FIRST ARTICLE INSPECTION STATUS SHEET
SOP 52-10-011.1-00-001	VENDOR REQUEST FOR MATERIAL REVIEW BOARD ACTION
Form ARG-916	SUPPLIER REQUEST FOR MATERIAL REVIEW BOARD ACTION
Form FC 9438-1	AS9102 AEROSPACE FIRST ARTICLE INSPECTION FORM 1
Form FC 9438-2	AS9102 AEROSPACE FIRST ARTICLE INSPECTION FORM 2
Form FC 9438-3	AS9102 AEROSPACE FIRST ARTICLE INSPECTION FORM 3

4.0 APPLICABILITY

(Situations which require First Article Inspection)

* Those circumstances covered in the applicability and requirements of SAE AS9102 and QCP 7.2.
* Modified standard product hardware with assigned six digit part numbers (i.e. washers, shims and fasteners).
* When requested by Eaton.

NOTE: AN, MS, NAS or ANSI standard catalog hardware, protective closures, chemical compounds, o-rings, castings, SK parts, rapid proto types and forgings are excluded from this First Article Inspection procedure.

Copies of Forms FC 9438-1, - 2 and - 3 are available on the Eaton website, as well as a write-able version for the supplier's convenience. A training package to aid completion in also available. Suppliers are encouraged to utilize these documents to aid the accurate completion of the FAI Requirement.

5.0 PURCHASING REQUIREMENTS

5.1 Upon receiving and examining the purchase requisition, the Purchasing Agent shall determine the first article inspection requirements as follows:

5.1.1 For new parts, the first article requirements will have been listed in the remarks of the purchase requisition.

5.1.2 For repeat buys, the first article requirements will be determined using the following criteria:

- When the supplier is producing the part for the first time, a complete first article inspection is required.
- When the last date of purchase from a selected supplier exceeds two years from the current date, a complete first article inspection is required.
- The revision of the part, determined from the Engineering Screens in WDS will be compared with the current First Article Inspection Status Sheet in the cost study folder.
    - If the current revision is different from that in the cost study folder, all Engineering Order (EOs) affecting these revisions must be reviewed for first article requirements.
    - If any EOs are identified as requiring a first article a partial first article for affected characteristics will be required.
- Product affected by a change in manufacturing process, source, equipment (machine) or NC Program, shall require a full or partial FAI as applicable. It is the supplier's responsibility to perform the FAI under any or all of these conditions. It shall also identify the change reason on the completed FAI Form.
- If there are no EOs requiring a first article and the supplier has made the part in the last two years, and no change in process as defined above had occurred, then no first article is required.

5.2 If a partial or complete FAI/LAI is required, the Purchasing Agent shall identify the first article requirements on the purchase order with a "Y" in the FAI field.

ø 5.3 For nameplates, buyer will forward artwork to Product Engineering Manager and Receiving Inspection for approval prior to the manufacturing of production parts.

6.0 PROCEDURES

6.1 Supplier Requirements

- The Supplier shall perform the First Article Inspection as stated on the Purchase Order in accordance with SAE AS9102, using Forms FC 9438-1, - 2 and - 3.

When verification of the First Article Inspection sample is to be performed at Eaton, the FAI sample shall be clearly identified (i.e.: tagged, marked on the container and segregated from production parts).

6.1.1 First Article Inspection and Approval

Supplier Preparation of Required Reports

- The supplier shall use full size drawings.
- The original marked up drawing with the identified characteristics shall be submitted with the sample layout inspection report as a part of the FAI package.
- The supplier must include material and special process certifications on all components.
- During First Article Inspection, all bar stock material is to be subjected to independent material verification testing (complete chemistry and physical comparison to actual certification values are not required, a chemical alloy identification is sufficient). Suppliers whose system provides for random testing of bar stock/plate material shall not be subject to this requirement. Excluded from above requirements are material supplied by Eaton, castings, forgings, rubber and cast bronze material which have their own verification procedures.
- When a partial First Article Inspection is required on characteristics affected by an Engineering Order (E.O.), the E.O. may be used in lieu of the original drawing for identifying characteristics to be inspected.
- Include the MRBA number from (Form ARG-916) in the column titled “non-conformance number” for any characteristic that is not conforming.

6.2 Last Article Inspection (LAI)

- When required by purchase order, a Last Article Inspection is required. This will be communicated to the Purchasing Department by the Quality Department. Purchasing shall set the WDS FAI flag to “YES” and note within the purchase order that a LAI is required.
- The part selected for LAI shall follow all the requirements as stated in Para. 6.1, 6.11 and 6.2.
- The LAI shall be a full inspection of all characteristics on the engineering drawing, including applicable material and process certifications.
- The supplier shall clearly state the reason for the full LAI in the appropriate block on Form FC 9438-1 by inputting “LAI”.

6.3 The supplier shall not ship any production parts to Eaton without an approved FAI unless written approval is obtained from the Eaton Quality Manager.

- Certified Suppliers: DSQRs may review and approve FAI’s (self-release), per QCP 5.5.
- Source Inspection: The Eaton Source Inspector will review and approve FAI/LAI at the supplier site, at time of source inspection, per QCP 5.4.

- Destination Inspection: The Supplier will initially ship only the FAI part and package to Eaton for review and approval. Once written FAI approval is obtained from Eaton, the supplier shall be permitted to ship balance of production parts to Eaton. For LAI, the supplier shall include the LAI package and part with the shipment.

7.0 QUALITY DEPARTMENT

7.1 Receiving Inspection Responsibilities

Receiving Inspection (IR) is responsible for the following:

- Upon arrival of an (IR) Inspection Report, determine whether a first article inspection was verified at Source Inspection, if verification is required in receiving inspection or if performed by a certified supplier.
- When source inspection has been waived by Quality Manager, Quality Assurance shall perform the inspection responsibilities (Reference paragraph 7.2).
- If first article inspection was waived, perform the complete first article inspection (FAI).
- 100% verification of entire FAI/LAI package, for completeness and accuracy.
- Complete First Article Inspection Status Sheet (Form ARG 1072), including all pertinent information and verification status.
- Upon completion of the First Article Inspection Sheet, receiving inspection shall forward a completed copy to Purchasing, file a copy with FAI Package, and file electronic copy on share drive.

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- For initial/full FAI's, mark FAI part with a circled "F". Generate a "Stock" Ticket and write "First Article Part" on ticket. Give ticket to Supply Chain Representative for their dispositioning of F.A.I. part. The FAI part is to be stored with applicable FAI documentation in the designated retention area.

7.2 Source Inspector Responsibilities

- Review the supplier's FAI/LAI for completeness.
- Select random characteristics, inspect and record actuals in Column 14 of the FAI Form FC 9438-3 and apply source inspection stamp.
- Compare results with suppliers' documented actuals and resolve any discrepancies.
- Review certifications and/or test results.
- If FAI/LAI is approved, the source inspector shall apply stamp to the certifications and sample layout inspection report.