

SUBJECT: FIRST ARTICLE INSPECTION WORK INSTRUCTION

- 1.0 Purpose:** The purpose of this work instruction is to provide detailed instructions to HDT suppliers for documenting and submitting First Article Inspection Reports (FAIs).
- 2.0 Scope:** This work instruction establishes the requirement for completing the First Article Inspection. The instructions pertain to the necessary inspection required to substantiate product conformance to drawings, specifications and contract requirements on released for production products.
- 3.0 Applicability:** The work instruction applies to HDT purchased product or services used in the manufacture of HDT saleable goods.
- 4.0 Reference:** ISO 9001 Clauses 7.4.1., 8.2.4
- 5.0 Definitions:**
- 5.1 **First Article Inspection (FAI):** A complete verification that the article being inspected complies with all requirements identified in engineering drawings, specifications, purchase orders, contract requirements, as well as any other applicable design requirement. This includes all applicable drawing notes.
- 5.2 **MS (Military Standard):** Part number starts with MS and is manufactured to a Military Standard specific to the part.
- 5.3 **NAS (National Aerospace Standard):** Part number starts with NAS and is manufactured to a National Aerospace Standard specific to the part.
- 5.4 **SAE (Society of Automotive Engineers):** Part number starts with SAE and is manufactured to a Society of Automotive Engineers standard specific to the part.
- 5.5 **COTS (Commercial Off The Shelf) Item:** Part is manufactured for commercial sale and is not part of HDT-TS configuration control.
- 5.6 **C of C (Certificate of Conformance):** A signed document from the provider stating that the parts were manufactured in compliance with all drawing and specification requirements and that records of such conformance are available upon request.

6.0 Responsibility:

HDT Supplier is responsible for: performing FAIs and identifying any discrepancies during the FAI. If an FAI does not meet one or more of the above requirements, the supplier C of C must reflect that fact. HDT QA representative will report the deficiencies to the responsible source i.e. Engineering, Manufacturing, or Materials.

HDT Business Unit Manager, or designee, is responsible for:

- Reviewing and dispositioning the FAI report and samples
- Submitting the dispositioned report and samples to the appropriate quality representative

HDT Quality Assurance Manager, or Quality Engineer is responsible for:

- Logging the FAI disposition
- Scanning the dispositioned FAI into the electronic folder
- Notifying Buyer or Material Analyst of FAI disposition
- Approving or rejecting requests for FAI sample submissions of less than five pieces

7.0 Work Instruction:

- 7.1 Unless otherwise approved by HDT, the supplier will provide a minimum of five sample pieces identified as First Article Inspection parts on the packing slip & outer packaging.
- 7.2 The supplier shall retrieve the current engineering drawing. The supplier shall verify the drawing revision and the revision on the purchase order are in agreement.
- 7.3 Upon verification that revision levels correspond, the supplier shall balloon number each of the engineering drawing characteristics. Reference dimensions identified on the drawing shall be ballooned and listed on the First Article Inspection form and identified by marking the tolerance block 'REF'. These characteristics need not be measured / recorded in the inspection results column of the form. **(See Figure 1. Sample First Article Inspection Form).**
- 7.4 Figure 1 is HDT's FAI report form. It is a sample of an FAI inspection report form. The supplier can use their own form, as long as all pertinent information to the FAI is contained on it.

HDT
Engineering & Technologies

FIRST ARTICLE INSPECTION REPORT

HDT-TS Manufactured
Production Order # _____

Supplier: _____
Purchase Order # _____

Buyer / Mat'l Only
Part No: _____ Rev: _____
Description: _____
Date: _____ Insp. # _____
FAI reason: New Rev. New Supplier
 Process Change Cust. Req. Other

| Characteristic | Required Dimensions | Tolerance | Inspection Results | | | Metrology Instrument /Comment | Acc | Rej |
|----------------|----------------------------------|-----------|--------------------|---|---|-------------------------------|-----|-----|
| | | | 1 | 2 | 3 | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |
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| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |
| 13 | | | | | | | | |
| 14 | | | | | | | | |
| 15 | | | | | | | | |
| 16 | Insert additional rows as needed | | | | | | | |

FAI Approved: _____ Date: _____
FAI Rejected: _____ Date: _____
Disposition: _____

QAF 0028 Rev. 7

Figure 1

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|---|---|
| 1. Check box if HDT-TS Manufactured | 11. Enter Date FAI Performed |
| 2. Enter HDT-TS Production Order # | 12. Enter required dimension corresponding to drawing balloon # |
| 3. Check box if Supplier Manufactured and insert Name of Supplier | 13. Enter Tolerance range of item 12 |
| 4. Enter Supplier Purchase Order # | 14. Enter actual measurement of sample 1 or Acc/Rej |
| 5. Enter the name of the Buyer or Material Analyst | 15. Enter actual measurement of sample 2 or Acc/Rej (when applicable) |
| 6. Enter Part # | 16. Enter actual measurement of sample 3 or Acc/Rej (when applicable) |
| 7. Enter Revision # | 17. Enter measurement device used |
| 8. Enter Part Description | 18. Enter ACC if actual measurement falls in prescribed tolerance range or REJ if the actual measurement falls out of the tolerance range accordingly |
| 9. Enter Clock No. Inspected By | 19. Leave blank for MRB or BUM disposition |
| 10. Enter reason FAI performed | |

- 7.4.1 Hardware items such as nuts, bolts, screws, washers, switches purchased as MS, NAS, SAE certified need not be dimensionally inspected and recorded on the FAI form. Received parts shall be visually inspected to confirm they conform to the purchase order description and that a valid C of C has been provided.
 - 7.4.1.1 A valid C of C shall include, at a minimum:
 - 7.4.1.1.1 The providing company's name, purchase order number, part number, revision level (NOTE: revision level must match that referenced is Adept or SAP, as applicable). Statement of conformance to all applicable drawings and specifications, Authorizing name (printed), authorizing signature, and title.
- 7.4.2 The supplier shall review hardware parts for conformance to description, workmanship, and as-received condition and, upon approval, mark their vendor's C of C as 'FAI approved', and submit it to HDT along with the FAI for the top level part.
- 7.5 The supplier will inspect each item 100% per the accompanied approved drawing. When the FAI quantity is less than five, as approved by the Quality Assurance Manager, or designee, the supplier will inspect 100% of the parts supplied.
- 7.6 The supplier will utilize the appropriate calibrated measuring instrument to make all required measurements and enter the measurement on the FAI Report Form.
- 7.7 The supplier will provide all applicable material test reports, certifications, the FAI report, ballooned FAI drawing, and samples to HDT.
- 7.8 The FAI parts will remain in the HDT's Quality Inspection area until disposition of the parts is complete through the FAI process.
- 7.9 The BU manager or designee shall review the FAI Report, subsequent documents, and samples for Acceptance or Rejection.
- 7.10 The BU manager or designee shall sign the last page of the FAI report as either accepted or rejected and submit the dispositioned report and samples to the quality representative for logging, scanning, and distribution.
 - 7.10.1 The quality representative shall forward a copy of the scanned report to the appropriate Buyer or Material Analyst as notification of the FAI outcome.

- 7.11 Any data or documentation that falls out of the tolerance range or required specification is an immediate cause for rejection. If rejected, HDT's quality representative shall initial the FAI Report as rejected and return it to HDT's receiving inspector. The inspector will affix a Red Rejection Tag and a copy of the FAI Report to the FAI parts for further disposition via HDT's Material Review Board.
- 7.12 Production orders of product shall not be accepted until the FAI has been approved and documented.

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|-----------------------------|------|
| Approvals | |
| Originator | Date |
| Manager | Date |
| VP Operations or Supervisor | |

| Revision | Description of Change | Change By: | Date |
|----------|-----------------------------------|------------|--------|
| 8 | Changed ISO 9001-2000 to ISO 9001 | A. Pesec | 6/9/09 |
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