

First Article Inspection

Document Control Revision History

Page	Reason for Change	Rev.	Reviewer	Release Date
All	New Document	A	R. Ryer	01/31/07

Signature:



Date: 01/31/07

1.0 Scope and Objectives

- 1.1 This procedure defines the activities required for First Article Inspection on customer product being set up on a new or modified process.
- 1.2 The objective of first article inspection is to verify that all applicable specifications and requirements pertaining to customer product are satisfied at the completion of the associated process on the first part. Approval to run additional parts with the process being monitored will be given when first article inspection indicates all contract requirements have satisfied. Additionally, the objective of the first article inspection procedure shall be to ensure that basic requirements are established and maintained as required by customer contract specific to St. Vrain Manufacturing's responsibility to provide control over the process, provide objective evidence of product conformance to specification and continued effectiveness of the quality management system.
- 1.3 The result of the first article inspection process shall be objective evidence the process is capable of manufacturing conforming product before additional product is manufactured with the process being monitored. First article inspection shall be used to improve customer product quality and improve the overall effectiveness of the quality management system.

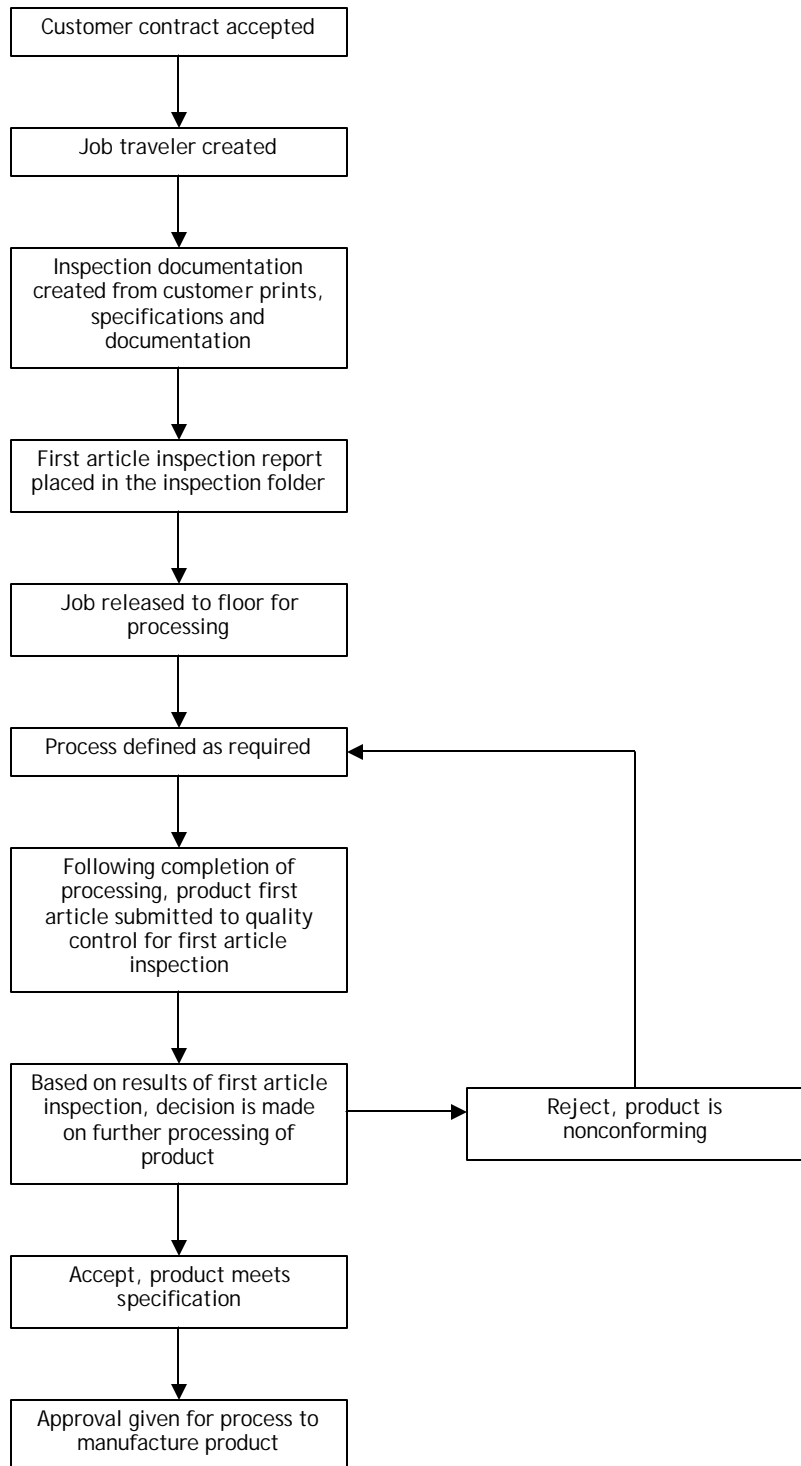
2.0 Applicability

- 2.1 First article inspection applies to:
 - 2.1.1 all aerospace product
 - 2.1.2 product for the following customers:
 - 2.1.2.1 Starsys
 - 2.1.2.2 Lockheed Martin
 - 2.1.2.3 Ball Aerospace & Technologies
 - 2.1.2.4 CU LASP
 - 2.1.2.5 L-3 Aeromet
 - 2.1.3 product requiring first article inspection per customer contract
- 2.2 St. Vrain Manufacturing production personnel
- 2.3 St. Vrain Manufacturing quality personnel
- 2.4 St. Vrain Manufacturing suppliers, as required

3.0 Related Documents

- 3.1 QM-001, Quality Manual, Section 8.2.4.2, First Article Inspection
- 3.2 QMS-008, Product Realization, Section 5.38, Process Verification - Inspection
- 3.3 St. Vrain Manufacturing First Article Inspection Report, SVM-0042
- 3.4 Customer prints, specifications and contract requirements
- 3.5 Government and Regulatory Authority Documents and Specifications

4.0 Process Flow Chart for First Article Inspection



5.0 Procedure

- 5.1 In accordance with AS9100, Section 8.2.4.2, St. Vrain Manufacturing recognizes the importance of first article inspection and has implemented a first article inspection process containing the elements required by customer contract, government and regulatory authorities.

Requirements

- 5.2 First article inspection is required on all aerospace product manufactured for the following customers (customers added as required):
- 5.2.1 Starsys
 - 5.2.2 Lockheed Martin
 - 5.2.3 Ball Aerospace & Technologies
 - 5.2.4 CU LASP
 - 5.2.5 L-3 Aeromet
- 5.3 First article inspection is performed as specified by customer contract requirements.

Process

- 5.4 Based on customer and/or contract requirements, first article inspection is implemented on a new order.
- 5.5 First article inspection documentation is generated at the completion of the job card.
- 5.6 First article inspection documentation will require verification and documentation of all specifications and requirements defined by, including, but not limited to:
- 5.6.1 customer contract
 - 5.6.2 print specification
 - 5.6.3 customer, government and regulatory authority process specifications
 - 5.6.4 parts lists
 - 5.6.5 bills of material
 - 5.6.6 work orders
 - 5.6.7 change orders
- 5.7 All requirements will be documented on the first article inspection form.
- 5.8 First article inspection form will be placed in the inspection folder that is maintained in the inspection area.

- 5.9 Job is released to the floor.
- 5.10 Production personnel define the process that will be used to manufacture customer product. Definition comes from, but is not limited to:
 - 5.10.1 customer models
 - 5.10.2 customer documentation
 - 5.10.3 customer change requests (electronic/hardcopy only)
 - 5.10.4 machine tool
 - 5.10.5 standard machining practices
- 5.11 Production personnel fine tune the process to manufacture product that satisfies all applicable specifications and customer requirements.
- 5.12 When process is optimized, production personnel will produce a first article that "should" meet all requirements.
- 5.13 First article part is given to inspection for verification to, and documentation of, all applicable specifications and customer requirements that are produced and/or affected by the process.
 - 5.13.1 production personnel will stop manufacturing pending results of first article inspection
 - 5.13.1.1 production personnel may decide to run parts pending first article inspection based on:
 - 5.13.1.1.1 complexity of part
 - 5.13.1.1.2 cost of part
 - 5.13.1.1.3 disposal of parts if first article fails
- 5.14 At the completion of first article inspection a decision will be made based on product conformance to specification:
 - 5.14.1 Accept: process is authorized to manufacture customer product (proceed to section 5.15)
 - 5.14.2 Reject: product does not conform to specification and process must be modified to correct errors before a new first article part is submitted for approval (return to section 5.10)

- 5.15 A new first article is required under the following conditions, but not limited to these examples:

- 5.15.1 major process modification, including, but not limited to:

5.15.1.1 change of machine center

5.15.1.2 change in process strategy

5.15.1.3 change in fixturing

- 5.15.2 revision to product specification that affects the machine center or current process

- 5.15.3 major nonconformance identified during in process inspection

- 5.16 First article inspection results shall be maintained in the job folder.

6.0 Responsibilities

- 6.1 Customer, Government and Regulatory Authority

- 6.1.1 provide complete documentation through:

6.1.1.1 contract

6.1.1.2 prints

6.1.1.3 specifications

6.1.1.4 work orders

6.1.1.5 change orders

6.1.1.6 customer, government and regulatory authority process specifications

- 6.2 St. Vrain Manufacturing Personnel

6.2.1 design process to product requirements

6.2.2 optimize process capability

6.2.3 supply first article part

6.2.4 modify process as required

6.3 St. Vrain Inspection Personnel

6.3.1 verify all applicable characteristics

6.3.2 render decision on first article results

6.3.2.1 accept

6.3.2.2 reject

6.4 Quality Manager

6.4.1 maintain document control system

6.4.2 issue and control documents

6.4.3 ensure documents are regularly reviewed and updated

6.4.4 ensure that regular internal audits, that address the continued applicability of this document, are scheduled

7.0 Record Retention

7.1 Standard retention period will be three years minimum, all documents.

7.1 Customers may stipulate longer retention times.

7.2 This controlled QMS procedure shall be maintained on the server indefinitely.

7.3 Any hardcopy of this controlled document shall be valid for one day after printing.

7.3.1 after one day has elapsed the document shall be used only as a reference document

7.3.2 reference documents must be verified for revision level prior to use

7.4 Obsolete documents shall be removed from area of use and disposed of as appropriate.

7.5 As appropriate, all quality records associated with this document are available for customer or regulatory agency review.

8.0 Document Control

8.1 Custodian: Quality Manager

8.2 Review Activity Quality Manager
President
Operations Manager

8.3 Approval Authority: Quality Manager
President
Operations Manager