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FN MANUFACTURING, LLC

A subsidiary of FN America

## Supplier Quality Manual

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# History of Changes to Supplier Quality Manual

<u>COVER – HISTORY OF CHANGES</u>		
<u>Date Issued</u>	<u>Revised by</u>	<u>Reason for Change</u>
July 27, 2007	R. Trace	To remove the use of the Supplier Quality Assurance Requirements QA236A, B and C forms
September 28, 2007	B. Graber	Section 5.0 Bullet #3 changed sub-tier to subcontractor. Section 8.0 First Paragraph Minor Changes - changed should to shall, removed sub-tier suppliers; changed should to may and added self-assessment/ or ratings related to past delivery and inspection results.
November 29, 2007	R. Trace	Added Section 3.1 Sampling Plan
March 7, 2008	B. Graber	Added information to Section 1.0 QMS, Section 3.0 Records of Calibration, Section 16.0 Packaging/Shipping; Added New Sections 17.0 through 21.0
October 15, 2008	A. Pepe	Added information to Section 3.0 and Section 6.0 in preparation for starting up a new Product line;
November 1, 2008	B. Breen	Added statement for AIE requirement Section 3.0, when contractually obligated
May 1, 2009	E. Kidd	Section 11.0 Changed the timeframe for record retention to 10 years and updated Section 12.0 to our new requirements

# **FN MANUFACTURING, LLC**

## **FNMLLC SUPPLIER COMMITMENT**

FNMLLC recognizes successful supplier relations as an essential part of maintaining our status as the number one small arms manufacturer in North America. To keep this status, teamwork continues to be a crucial element in maintaining a positive supplier/customer relationship. As the customer, FNMLLC is committed to establishing and maintaining a two-way channel of communication. It is the intent of FNMLLC to convey all requirements precisely, to eliminate any questions regarding the expectations we have of our suppliers.

It is the philosophy of FNMLLC to assess the commitment of each supplier and to build a long-term relationship with those who both meet and maintain this adherence to requirements. Each FNMLLC supplier will be required to meet the appropriate quality system requirements prior to contract eligibility.

### **1.0 QUALITY MANAGEMENT SYSTEM**

The supplier is required to have a quality manual, which documents the systems and procedures to be used to control the product. The quality manual must be approved by the supplier's management. The documentation should include statements of a quality policy and quality objectives. The Quality System shall be capable of compliance with ISO 9001 Quality Program Requirements.

### **2.0 QUALITY PLANNING**

The potential supplier is required to participate in a preaward survey for the purpose of reviewing production capabilities and the supplier's quality system.

It is in the best interest of FNMLLC and the supplier to review all drawing and specification requirements prior to award of the contract (purchase order). Requirements for the SPC plan, control plans, process control procedures and documentation requirements will be reviewed when applicable. Any additional issues which could impact the quality of the product supplied will be addressed.

### **2.1 DRAWING AND SPECIFICATION CONTROL**

It is the responsibility of the supplier to verify that all drawings and specifications are to the latest purchase order revision. Should current copies be required, they can be obtained through the appropriate FNMLLC buyer. The supplier is required to adhere to any secondary specifications referenced in the primary specifications unless otherwise stated in the contract or in writing from the FNMLLC Procurement Organization. It is also the responsibility of the supplier to assure that those persons within its organization, directly responsible for assuring the compliance of the product,

understand fully, all drawings and specifications. When clarifications and/or interpretations are needed, the supplier is to contact the appropriate FNMLLC Supplier Quality Assurance Engineer.

### **3.0 ACCEPTANCE INSPECTION EQUIPMENT CONTROL (AIE)**

The supplier and subcontractors are responsible for providing all AIE, *when contractually obligated*, adequate for assuring product compliance and shall be available for use on the First Article submission. Detailed descriptions of all AIE used for inspection characteristics listed as “Critical, Special, or Major” shall be submitted for approval by FNMLLC and/or Government using Quality Form QA-AIE. All measuring and test equipment shall be calibrated prior to use, and the calibration system shall comply with ISO 10012 with records of calibration available for review upon request. FNMLLC will not supply gaging unless otherwise specified by contract. Any calibration of FNMLLC supplied gaging is the responsibility of the supplier, unless otherwise stated in writing by FNMLLC. Any repair or replacement costs incurred will be the responsibility of the supplier. Any changes to AIE after initial approval must be submitted for approval. Once gage is accepted for use at FNMLLC, gage can be used concurrently; pending customer/ Government approval.

Calibration shall be in accordance with industry recognized measurement standards and traceable to the NIST. Records will include at a minimum; gage number, date of last calibration or inspection, results, and date of next scheduled calibration or inspection. Prior to introduction into the system, repeatability/ reproducibility (R&R) studies shall be performed on all gages. R & R studies should then be performed on a periodic basis as outlined in the control plan.

FNMLLC and/or Government reserve the right to disapprove, at any time during the performance of this contract, any AIE that is not accomplishing its intended use in verifying an inspection or test characteristic.

Note: Where drawings exist for FNMLLC specified gaging, those drawings will be provided to the supplier upon request. Requests should be directed in writing to the appropriate Supplier Quality Assurance Engineer or Buyer.

### **3.1 SAMPLING PLANS**

Sampling inspection shall be in accordance with Mil-Std-1916 where the acceptance number is Zero. Switching procedures can be incorporated. (Reference FNMLLC Quality Assurance Provision & QA-1916)

FNMLLC or Government Source Inspection may be initiated shall the need develop.

### **4.0 CERTIFICATIONS**

When specified as QAPS on the part drawing, certifications shall accompany each shipment of product received by FNMLLC: (Reference FNMLLC Quality Assurance Provision and 12993884, 12976936 or stand-alone QAP sheet for given Part Number).

#### **4.1 CERTIFICATION OF CONFORMANCE (COC)**

Where required by contract or specified as QAPs on the part drawing, the supplier shall supply with each shipment a Certificate of Conformance (COC). The COC must be supported by inspection and/or test data. Although a requirement for lot acceptance, the COC will not be used as the sole basis for FNMLLC acceptance unless specifically stated in the contract. (Reference FNMLLC Quality Assurance Provision and 12993884, 12976936 or stand-alone QAP sheet for given Part Number).

As a minimum, the COC shall contain the following:

Name of company and date, contract number or purchase order number and drawing number.

Complete nomenclature and supplier or parts together with lot number or other identification.

The quantity in each lot or shipment shall be given.

A statement certifying that the material meets all requirements of the contract.

Signature and title of certifying official.

For product defined as commercial procurement, a COC is acceptable for standard hardware; such as, pins, nuts, bolts, or washers.

#### **4.2 CERTIFIED TEST REPORT (CTR).**

Where required by contract or specified as QAPs on the part drawing, the supplier shall supply with each shipment certified test reports (CTR). The CTR will not be used as the sole basis for FNMLLC acceptance unless indicated in the contract or technical documentation.

As a minimum, the CTR shall contain the following:

Name of company and date, contract number or purchase order number and drawing number.

Complete nomenclature of supplies or parts together with lot number or other identification.

The quantity in each lot or shipment shall be given.

All inspections and tests required are to be included in the report. The report shall identify each lot submitted for acceptance by lot number, the specification or drawing, revision and date, grade or type as applicable, number of specimens tested, specified characteristics and requirements along with actual results obtained. Reports of the raw material producer's chemical, mechanical and physical analysis are to be included. A statement certifying that the material meets all requirements of the contract. Signature and title of certifying official.

For products defined as commercial procurement, CTR's are required for material, plating, coatings, heat treatments, NDT, weld, etc.

Suppliers may submit Quality Form QA-232 to reduce the amount of paperwork required where multiple shipments are covered by the same material certs.

## **5.0 CONDITIONS REQUIRING FIRST ARTICLE**

FNMLLC requires first article sample submittal should any of the following conditions exist.

- Upon initial production of a part or service.
- Whenever a process or tooling change occurs that may in any way affect the form, fit, function, durability, appearance or interchangeability of the product or its component parts.
- Upon a change in the supplier's or their subcontractor's manufacturing location or facility, the supplier must notify, in writing, the Procurement Organization for determination of first article requirements. In addition, suppliers shall not change subcontractors after first article approval without notifying the Procurement Organization.
- Prior to first article sample submittal the supplier must notify the FNMLLC Procurement Organization in the event that temporary tooling or tool room operations are required to meet initial submittals or production shipments. Upon completion of production, tooling a second first article sample must be submitted.

## **6.0 FIRST ARTICLE SUBMITTAL**

For the specified number of samples, the supplier will provide the product which complies with all requirements.

FNMLLC suppliers are required to furnish product samples representative of production parts accompanied by inspection and test reports. Permission to deviate from any part of the first article requirements must be obtained in writing from Supplier Quality Assurance. Production parts run prior to FNMLLC First Article approval is at the supplier's risk.

First article samples must be identified individually and traceable to the inspection report. Any scribed layout lines or reference marks used to perform the inspection must be visible on the submitted sample parts. For parts manufactured from duplicate fixtures, multiple cavity molds, dies, etc., one dimensionally inspected part from each is required.

First article samples and reports are to be clearly identified as such on the shipping container. In addition, the container should be identified with the supplier's name, FNMLLC's part number, drawing revision letter and purchase order number. A second copy of all inspection and test reports and material certifications is to be mailed separately to the Quality Assurance Department to the attention of the appropriate

Quality Assurance Engineer. Where modified or specially designed packaging is involved, the first article parts should be shipped in these containers.

## **7.0 FIRST ARTICLE INSPECTION AND TEST**

The supplier must perform inspections and tests necessary to assure first article samples conform to all dimensional, chemical and physical specifications. Any requirements specified on purchase documents or as extensions of the released drawings must be met. All results must be recorded on inspection and/or laboratory report forms listing actual measurements found and be submitted to FNMLLC.

Suppliers unable to perform the necessary inspections and tests within their facilities are responsible for having these services performed by a reliable outside source. These sources must be identified on all inspection documents submitted to FNMLLC.

First article samples submitted due to engineering, process or tooling changes or resubmitted due to a nonconformance need only be inspected and/or tested for the characteristics affected.

When the dimensional sample cannot also serve as a material test sample as in chemical products such as fluids, compounds, etc.. the supplier must also provide a representative material sample where required by FNMLLC Supplier Quality Assurance. The supplier will also provide prepared sections of castings, forgings, weldments, heat-treated and plated parts, etc., when specified.

All nondestructive test results must be recorded and included with the first article inspection report (e.g. magnetic particle, x-ray, ultrasonic, etc.)

NOTE: All supplier submitted samples, inspection/test reports, nondestructive test, material certifications, etc., are subject to verification by FNMLLC.

## **8.0 PURCHASED MATERIAL AND SUBCONTRACTED SERVICES CONTROL**

Suppliers shall have in place a formalized program to assess the quality systems of subcontractors. This program may include the use of on site audits/self assessments/ or ratings related to past delivery and inspection results. All results should be documented and retained for review.

The supplier is responsible for assuring that the products and services purchased for use in FNMLLC products conform to all requirements. Procedures and instructions must exist to control purchased material. Procedures and instructions shall encompass sampling, documentation of inspection results, material certifications, and control of nonconforming material at a minimum.

Adequate records must be maintained and available for review by FNMLLC representatives.

## **9.0 MANUFACTURING PROCESS CONTROL**

Throughout the manufacturing process, the supplier must apply procedures sufficient to maintain conformance to specifications and reduce variation. Inspection and test results must be well documented and traceable. The identity of materials must be maintained throughout the process and traceable to the sub-tier supplier as applicable.

Elements to establish and maintain process controls include, but are not limited to:

### **9.1 INSTRUCTIONS**

Written instructions covering production processes, inspections and tests should be available at workstations. Personnel shall demonstrate that they understand and follow all work instructions.

### **9.2 PROCESS CAPABILITY**

Process capability can be determined only after the process is in statistical control. Acceptable process capability requires for variable data, the process average, plus and minus the 3-sigma spread of the distribution (99.73% of the process output) fall within the specification tolerance. A Cpk of 1.33 should be considered a starting point. The supplier must work toward continuous improvement.

### **9.3 ON GOING PROCESS CONTROL**

In-process inspection and/or testing adequate to maintain control of all processes are required. The supplier should use statistical methods for the control of characteristics, which have been identified by FNMLLC as key control characteristics (KCC). Where FNMLLC has not identified key control characteristics, the supplier is expected to use statistical methods to control those characteristics, which the supplier has determined are important to maintain control of the process. All methods of process control must be documented and available for review by FNMLLC representatives.

### **9.4 LOT CONTROL**

For effective control and traceability, the supplier must have written lot identification control procedures in effect when materials and/or processes require lot segregation.

#### **NOTE:**

Where statistical process controls has not been or is only partially established, or approval has not been granted by FNMLLC allowing reduced inspection based on

acceptable data, final acceptance inspection or testing must be performed. 100% inspection and/or testing or an appropriate statistically valid acceptance sampling plan based on MIL-STD-1916 must be utilized.

## **10.0 FINAL INSPECTION REPORTS**

10.1 Required for each shipment of product.

## **11.0 RECORD RETENTION**

Minimum record retention period is 10 years. Records shall provide evidence of inspection/ tests/ special processes/and or additional requirements specified on the print of FN's P-200 or P-200B documentation.

## **12.0 Alternative Conformance Provisions**

Alternative quality conformance procedures such as statistical process control, methods, equipment, tool control and other types of sampling procedures may be considered if they provide as a minimum the level of inspection noted in the Quality Assurance Provision.

The supplier may request in writing that acceptance inspection/testing performed in accordance with contract requirements be reduced when the process/operation parameter under control has demonstrated both stability and capability. FNMLLC and/or customer approval will be based on the process documentation and demonstrated capability.

FNMLLC and/or customer reserves the right to withdraw authorization to reduce or eliminate proposed methods and return to standard inspection procedures at any time.

## **13.0 TOOLING AND EQUIPMENT MAINTENANCE**

All tooling and equipment used in the manufacturing of FNMLLC product shall be maintained in a condition that will assure the continued quality of that product.

All FNMLLC-owned tooling and equipment must be permanently identified as the property of FN Manufacturing, LLC. FNMLLC property may not be used for the production of any other product without the written consent of FNMLLC management.

The supplier is responsible for the update of tooling and fixtures to the latest drawing revisions as released by FNMLLC. All updates must be documented and traceable. Obsolete tooling, designs, etc., cannot be disposed of without written authorization from FNMLLC.

#### **14.0 NONCONFORMING MATERIAL DETECTED AT SUPPLIER LOCATION**

Upon detection of nonconforming material, the supplier must immediately determine the extent of the problem and take prompt action to correct the condition. Suspect material must be clearly identified as such and removed from the normal production flow. Action must be initiated to correct the condition and prevent the shipment of all suspect product. The supplier must immediately notify FNMLLC of any suspect shipments, which may have been released.

Material which has been subjected to rework or salvage operations must be retested and/or reinspected for the nonconforming condition prior to release for shipment or reintroduction into the manufacturing process. All actions taken along with actual reinspection and/or test results must be documented and retained for review by an FNMLLC representative.

#### **15.0 NONCONFORMING MATERIAL DETECTED AT FNMLLC**

Upon completion of inspection, detection of nonconforming material at FNMLLC the Supplier Quality Assurance Engineer will notify the applicable FNMLLC Buyer.

In the event that conforming material cannot be provided in sufficient time to support production needs, the supplier will be notified of the need to rework/or sort material at the supplier's expense.

Costs incurred for the return of shipments, sorting, repackaging or rework of nonconforming material at FNMLLC is the responsibility of the supplier. The supplier must submit in writing a corrective action plan to the Quality Assurance Department. The plan must detail all measures taken to correct and prevent a recurrence of the nonconformance. Effective dates are to be included.

#### **16.0 PACKAGING/SHIPPING**

Supplier and their sub-tier suppliers shall deliver purchased items meeting the requirements of best commercial practices. In addition, all parts shall be provided with adequate protection from damage including corrosion and/or contamination, as applicable. Bare metal-to-metal contact is not allowed under any circumstances.

#### **17.0 MATERIAL IDENTIFICATION REQUIREMENTS**

When applicable per the drawing, all parts/assemblies shall be identified using the part number, revision letter, and serial number. In addition, when the drawing requires the

material to be identified in accordance with Mil-Std-130 the FNM LLC Cage Code (3S679) shall be used as the Manufacturer.

### **18.0 RIGHT OF ACCESS**

During the performance of this order, Supplier's Quality Control or Inspection and Manufacturing processes are subject to review, verification, and analysis by an authorized FNM LLC, Government, or customer representative(s).

### **19.0 FNM LLC SOURCE INSPECTION**

FNM may elect to perform Source Inspection prior to shipment of items from Supplier's plant. Supplier shall notify FNM LLC Quality at least (10) days prior to availability of supplies for inspection. Performance of FNM LLC Source Inspection does not relieve the Supplier from responsibility should discrepant conditions be discovered at FNM LLC or final destination.

## **20.0 GOVERNMENT SOURCE INSPECTION (GSI) AT SUPPLIER FACILITY**

When Government Source Inspection and/or test has been specified on the applicable purchase order, the supplier shall promptly furnish a copy of the order to the government representative who normally services your facility. GSI is required prior to shipment from your plant.

## **21.0 SURFACE PREPARATION PROCEDURE**

When the drawing specifies Phosphate Coat per MIL-DTL-16232, the supplier and their sub-tier suppliers of the parts/assembly shall submit to FNM LLC a copy of the plating source government approval letter for the process. When a plating source approval letter is not available, the plating source shall prepare and submit through the supplier for approval by FNM LLC and the Government two (2) copies of their written procedure prior to First Article submissions.



## FIRST ARTICLE QUALITY REQUIREMENTS

1. Quantity requirement of five (5) pc. If coating required, 10 pc. (5 w/ finish, 5/without finish)
2. Inspection reports must be completed using same measurement unit as blueprint (English = English, Metric= Metric). A supplier may use either method in producing and inspection, but must convert all reports to the blueprint unit.
3. A numbered blueprint relating to the characteristic numbered inspection report.
4. All major and minor QAP characteristics must be noted as such with QAP item number on inspection report.
5. First Article inspection report must include all characteristics (dimensional and notes) listed on the blueprint, with drawing zone.
6. F/A inspection report must include the following:
  - A. Actual dimensional results for all five (5) F/A pieces, pieces numbered to reference report.
  - B. Address all blueprint notes
  - C. Part number, nomenclature, Rev. of blueprint, P.O. number, date of inspection, name and title of person inspecting, acceptance notated, type of inspection used (caliper, micrometer, comparator, etc.)
7. Supporting documentation must include:
  - A. Certified Test Reports to Section 3.5.1 of MIL-W-63150
  - B. Other Tests as required by the blueprint and/or applicable Quality Assurance Provision.