



New Hampshire Ball Bearings, Inc.

MinebeaMitsumi Group

SUPLIER QUALITY MANUAL Precision Division

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• INTRODUCTION

Our Suppliers

New Hampshire Ball Bearing recognizes the very important role our Suppliers have in the value we offer our customers. As an extension of our own operations, NHBB requires that our Suppliers provide high-quality products and/or services, must be fully compliant with the requirements indicated in this manual, and expectations are met.

Purpose

New Hampshire Ball Bearing serves diverse market sectors, such as aerospace, industrial, automotive, and medical. The purpose of this manual is to inform NHBB Suppliers of the core expectations we have regarding the Suppliers' quality management systems, technical-design requirements, process requirements and manufacturing process controls required for the purpose of doing business with NHBB.

Scope

This manual applies to all Suppliers providing NHBB with materials, components, processes, and services utilized to manufacture NHBB products for delivery to customers at Precision Division facility, including intra-company Suppliers to Supplier sub-tier sources.

In the event of conflict between the requirements of this manual and the requirements of the purchase order, the purchase order requirement shall stand unless otherwise agreed with NHBB Quality or Purchasing representative in writing.

Questions

Questions concerning this manual should be directed to your respective NHBB Buyer.

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NHBB SUPPLIER COMMITMENT

NHBB recognizes that strong supplier relationships are an essential component of our business strategy. . It is our philosophy to build long-term relationships with our Suppliers and to use those relationships to collaborate and strive for mutual improvement.

NHBB is committed to establishing and maintaining a two-way channel of communication. It is our intent to convey all requirements precisely. By way of active teamwork and open communication, NHBB and Suppliers can drive improvements in quality, delivery and cost reduction to our mutual benefit

• EXPORT CONTROL

The Supplier shall comply with all applicable laws and regulations regarding export-controlled items, including, but not limited to, the requirement for the Supplier to register with the Department of State in accordance with the ITAR. Export-controlled items, as used in this clause, means items subject to the Export Administration Regulations (EAR) (15 CFR Parts 730-774) or the International Traffic in Arms Regulations (ITAR)(22 CFR Parts 120-130).

Suppliers are responsible for ensuring that only US employees with legal residency are permitted to work with NHBB product and/or drawing if identified to be ITAR controlled.

• NHBB DOCUMENTS / REFERENCES

COR-QMS-7.4.1 FM1 -NHBB Supplier survey.
COR-QMS-7.4.1 FM2- On-Site Supplier Audit Checklist
COR-QMS-7.4.1 FM3- Supplier Deviation Form (SDN)
Q.I. 8.3.6- Supplier Management Procedure

The NHBB specifications, Customer Specification, and Industry/Standard Specification referenced in this manual and in the NHBB Supplier Purchase Orders shall be the current revision at the date of the issuance of the Purchase Order.

The latest revisions of the NHBB Internal Specifications flowed down in a Purchase Order are available at www.nhbb.com/our-company/nhbb-divisions/precision-division.

Supplier will be notified by purchasing of NHBB document revision changes, suppliers are responsible for reviewing compliance of those changes.

Suppliers are responsible for reviewing the documents pertaining to the order, requesting any document as needed and supplying a product/ service compliant to the latest revision.

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• DEFINITIONS AND ACRONYMS

ASL – Approved Supplier List

DSQR – Designated Supplier Quality Representative

FOD – Foreign Object Debris/Damage. Protection of product from being invaded and/or damaged by foreign objects during manufacturing, assembly, test, packaging and transportation.

KEY CHARACTERISTICS – An attribute or feature whose variation has a significant effect on product fit, form, function, performance, service life or producibility, that requires specific actions for purpose of controlling variation. OTD – On Time Delivery

QMS – Quality Management System

SCAR – Supplier Corrective Action Request SDN – Supplier Deviation Notice

SPECIAL PROCESSES – are processes that alter the material through mechanical, thermal, and chemical operations. The resulting output cannot be verified by subsequent monitoring; deficiencies become apparent only after the product is in use or the service has been delivered.

SUPPLIER – A first tier Supplier to NHBB

SUBTIER SUPPLIER – A Supplier to an NHBB's Supplier

• SUPPLIER CLASSIFICATION

Based on product or service supplied, NHBB Suppliers are classified by the following criteria:

- Direct-Product & Processes

Suppliers that provide raw material, engineered material, final components, special processes, machining. Product and processes performed from these Suppliers are intended to be incorporated to NHBB's final product

- Direct- Services

Calibration, source inspection services, and certification bodies. Services executed by these Suppliers contribute directly to NHBB's product conformity.

- Indirect

Suppliers that provided material or services to aid the day-to-day operation without a direct contribution to NHBB's final product, e.g. equipment maintenance Suppliers, tooling and office Suppliers, marketing and consulting services, to name a few.

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• SECTION ONE - QUALITY SYSTEM REQUIREMENTS

Quality System Certification:

The Supplier classified as direct shall maintain a Quality Management System (QMS) suitable to the products and services provided to NHBB, which is certified by an accredited third-party certification body to the latest version, as applicable, such as but not limited to:

- **All Suppliers** shall establish and maintain a QMS that is in compliance with AS/EN/JISQ9100 - Quality Management System Requirements (Aerospace), ISO 9001 - Quality Management System Requirements.
- **Calibration Suppliers** shall be NIST traceable and shall establish and maintain a measurement management system that is in compliance with either ISO 10012/ISO 17025 - Requirements for Measurement Processes and Measuring Equipment
- **Distributors** shall establish and maintain a QMS that is in compliance with AS9120 and/or any of the accreditations listed above in All Suppliers.

Suppliers shall also meet other specific customer system requirements as required where applicable and flowed down on the purchase order.

Special Process System Certification:

Special Process Suppliers and Supplier sub-tiers that provide special processes shall establish and maintain a NADCAP certification related to the Special Process in question; such as but not limited to the following: Chemical Processing (i.e. passivation, plating, coating, dry film,..), NDT (x-ray, MPI, FPI, eddy current), Heat Treating, Material Testing, Non Conventional Machining (i.e. EDM).

In absence of a QMS or Nadcap certification exceptions will be made case by case, reference Q.I. 8.3.6-Supplier Management Procedure. Suppliers classified as Direct- Services are excluded from this exception.

Preference will be given to suppliers certified to AS9100 and Nadcap where applicable.

Supplier Workforce Awareness:

All suppliers shall ensure their workforce is aware of their contribution to product and service conformity; their contribution to product safety and the importance of ethical behavior.

Right of Entry:

NHBB, our Customers, Government representatives, and regulatory agencies will have the right of entry to survey facilities and review all processes, subcontractors, contracted parts, procedure, and records to verify the quality of contracted work, records and material.

The Supplier will permit access to OASIS and Nadcap database information when requested.

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Supplier Changes:

Changes that may compromise conformity, fit, form or function of the processes, products, or services require formal communication to NHBB in writing.

Notification required

- New equipment acquisitions for processing or inspection.
- Sequence change of Operations.
- Changes in process targets, tolerances, and operating parameters.
- Suspension or withdrawal of third party QMS/ Nadcap certification.
- QMS Changes including name change, address change, changes in key management personnel, site configuration, ownership.

Approval Required

- Changes in product conformity.
- Material Substitution.
- Deviation from agreed frozen processes and control plans.
- Changed in location of work performed (outsourcing).
- Addition, elimination, substitution or combination changes of operations.
- Change in special process suppliers and suppliers critical to the operation.
- Surrendering the Quality System certification or Nadcap Certification.

Supplier Performance and Rating:

Suppliers Overall Performance is measured using a weighted rating made up of two elements, Overall quality rating and Overall On-time rating. The following applies for Suppliers classified as Direct- product and processes:

Supplier performance classification	Supplier Overall Performance Rating
Gold- Exceptional	100% to 97.0%
Green- Satisfactory	96.9% to 90.0%
Yellow- Marginal	89.9% to 85.0%
Red- Unsatisfactory	84.9% to 0%

Supplier Overall Performance rating is an important factor to continue expanding business relations and mutual growth. Action is required for those suppliers with a performance classified as unsatisfactory.

- **Gold (Exceptional)**
Supplier performance clearly exceeds expectations; evaluation element was accomplished by the supplier with few minor problems where corrective actions taken were highly effective.
- **Silver (Good)**
Supplier performance meets and may exceed expectations; evaluation element was accomplished by the supplier with some minor problems where corrective actions taken were effective.

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- **Yellow (Needs Improvement)**

Supplier performance does not meet expectations; performance for the evaluation element reflects a serious problem where corrective actions have not yet been identified or fully implemented. If implemented the supplier's actions appear only marginally effective.

- **Red (Unsatisfactory)**

Supplier performance clearly does not meet expectations and recovery is not likely in a timely manner; performance for the evaluation element contains serious for which the corrective actions were ineffective.

- Suppliers showing a 12 months rolling average period of 84.9% of the overall performance rating or below ; may be subjected to various performance enhancement activities, which may include, but not limited to, corrective actions, on-site quality system survey, Quality Improvement plan (QIP) request, supplier on-going meetings for resolution or disqualification of supplier as an approved source.

Documentation and Record Control:

Supplier and sub-tier supplier records must contain test results and quality data in sufficient detail to substantiate conformance to requirements.

Records necessary to demonstrate compliance with the requirements of the purchase order shall be retained at the Supplier's facility, remain legible, and made available by NHBB or NHBB customers' representatives upon request.

Records shall at a minimum include purchase order records, certificates of conformity, inspection/ test reports, calibration data, non-conformance data, personnel training and competency records, evidence of sub-tier selection and control. These records shall be retained for no less than 30 years unless written authorization is obtained from NHBB.

If the supplier is not in a position to continue to retain these records, they must be offered to NHBB for retention.

Corrections to work instructions or documents associated to materials delivered to NHBB shall be recorded, dated and traceable to the originator. The use of correction fluid on documents and records is strictly prohibited. Instead, corrections shall be made by single line strikethrough of erroneous content and shall indicate originator and date of correction.

Qualified Personnel:

The supplier shall determine the necessary competence for personnel performing work, inspection and tests affecting product quality; maintain appropriate training and qualification processes to ensure that delivered product and services meets all established requirements. For special processes, the personnel performing the function shall be suitably qualified in accordance with the applicable standards.

Records of training shall be maintained and made available upon request.

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Eye Examinations:

Individuals who inspect material for final acceptance shall be capable of meeting the following eyesight requirements in at least one eye, corrected with glasses or non-corrected:

Near Vision: Jaeger J.2 or Snellen N5

Color: Ability to distinguish red, green, blue and yellow as determined by Standard Colored Plates .

Testing shall be performed annually and a record of tests shall be maintained.

A medical professional must perform the eye examination (eye clinic, occupational health clinic, onsite health clinic or medical department).

Contract Review:

Purchase orders shall be formally reviewed by the Supplier to ensure that the supplier has the technical and logistical capabilities to meet the requirements. Any discrepancies will be resolved in a documented traceable manner before the order or contract is accepted. Verbal agreements shall under no circumstances be construed as approval or authorization to proceed.

Purchasing:

Where specified on the drawing or purchase order, the Supplier shall purchase raw materials, products, materials or special process services from NHBB or NHBB end user designated sources. The Supplier is responsible to ensure that items procured meet all applicable requirements.

The Supplier will not subcontract any part of the process without the written approval of NHBB.

If the Supplier subsequently sub-contracts part of the work with NHBB's agreement, then the Supplier will ensure that all flow down requirements are flowed down to each sub-tier supplier.

The Supplier will maintain documented procedures for qualifying, approving and measuring the performance of sub-tier suppliers. The Supplier shall maintain records of all "on receipt" inspections and Approval Certificates for received materials as evidence of verification of purchase product.

NHBB reserves the right to evaluate and audit any sub-tier supplier for approval. This will not relieve the direct Supplier of responsibility to ensure the quality of any product/service obtained.

Certificate of Conformity:

All materials and services will be accompanied by a Certificate of Conformity, dated and signed by authorized personnel, which must carry as a minimum the following information:

- Supplier Name and Address
- Purchase Order Number and Line Item numbers
- Product, Process or Service identification
- Part number or NHBB manufacturing number and drawing revision as identified on the PO. COTS items may use the industry or catalog part number
- NHBB Work Order(s)/Job Number(s) if applicable
- Supplier Work Order/Batch/Lot/Heat Lot number(s) as applicable

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- Quantity delivered: contact NHBB Buyer immediately in the event actual quantities do not match the PO quantity.
- Statement of conformance as applicable:
Specification and revision
DFARS 252.225-7009, 7008
- Test results for purchased product and raw materials.

When additional certifications/test reports are required, the requirements will be specified on the purchase order.

Certificate of Test / Analysis:

The Certificate of Test/Analysis shall contain at a minimum the information listed below to the extent applicable.

- Identifier associating test report to the Certificate of Conformance
- The testing specification used, if not called out by the material specification, and test conditions as applicable,
- The numerical results of all tests and inspections performed for which the specification established numerical requirements,
- Specification limits for each requirement/characteristic, to facilitate comparison of specification versus results,
- Description of results (e.g. conform/non-conform) of all tests for which specification does not establish numerical requirements,
- Statement that the certificate shall not be reproduced except in full without written approval of the laboratory,

DFARS compliant material:

Specialty metals must be melted in the United States or a qualifying country; or product can be melted anywhere but must be “incorporated in an article manufactured in a qualifying country” per the requirement in DFAR 252.225. The Supplier agrees to include a statement certifying DFARS compliance to DFAR 252.225-7009 /7008 to appear on the Certificate of Conformance.

For the complete definition and requirement of “specialty materials” refer to the current DFARS.

Identification and Traceability:

All raw material obtained by the Supplier to meet an order, and all parts incorporated into assemblies which are subsequently supplied to NHBB must be traceable to the manufacturing source and identifiable to the manufactured item through all stages of the Supplier’s manufacturing process. In the event of processes being further sub-contracted, traceability to the sub-tier control, inspection and/or test records must be maintained.

All Suppliers/distributors of raw material must also attach, with each delivered batch, a copy of the original material certificate obtained from the source mill.

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All Suppliers/distributors of chemicals, oils and lubricants must also attach, with each delivered batch, a copy of the Material Safety Data Sheet (SDS).

For all lubricants the NHBB Lubricant Code shall be marked on the container, labels and paperwork.

Single Lots:

Strict accountability of material furnished by NHBB shall be maintained by the Supplier. All material used for each PO line shall consist of the same origin of material (heat, batch, etc). The Suppliers shall maintain single lot control for each PO line. If multiple lots are required to complete the order, the Supplier shall contact NHBB and request adding additional PO lines. The Supplier shall maintain lot integrity and provide positive traceability of material lot/heat numbers to the specific product(s) delivered. Product shall be clearly identified with corresponding line item.

Preservation:

The Supplier shall preserve the conformity of product until its delivery to NHBB. Materials shall be handled, stored and protected in such a manner as to prevent deterioration, damage, or loss of identification and traceability at all times. Preservation shall include, where applicable: cleaning, use of rust preventive methods for parts subject to corrosion, detection and removal of FOD, marking/labeling including safety warnings, shelf life control and stock rotation.

Packaging Delivery:

The Supplier shall ensure that all material is delivered on time; each package is identified and clearly labeled, as required by applicable drawing, specification and/or purchase order. Deliveries shall be packaged to prevent damage (e.g. nicks, dents, scratches), deterioration, corrosion and other risks while at Supplier's facility and in transit. Certification, test reports and documentation requirements as identified on the NHBB purchase order shall accompany each delivery as appropriate.

Limited Shell life material control:

A statement shall accompany all material shipments listing manufactured date and shelf life date on product supplied. Statement shall also note any special storage instructions. All parts having a shelf life requirement shall have a minimum of 75% of the shelf life remaining upon receipt at NHBB. A remaining shell life less than 75% will be subject to rejection.

Mercury Free:

The supplies furnished under this contract shall contain no metallic mercury or mercury compounds. In the event of any accident or suspicion of contamination involving mercury or any other toxic substance in the material, Supplier shall inform NHBB immediately.

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Statistical Process Control/Histogram:

Where contractually agreed, the Supplier shall certify that processes used during the manufacturing of key characteristic of product delivered to NHBB were in statistical control. Data shall be submitted with product showing that process (es) maintained a minimum 1.33 CPK. A Histogram demonstrating conformance of the requirement flowed down can be supplied in lieu.

Foreign Object Debris (FOD) Control:

All items delivered to NHBB shall be Foreign Object Debris/Damage free. The Supplier shall establish and maintain an effective Foreign Object Damage / Debris Prevention Program (FOD) in accordance with AS-9146 or equivalent.

Counterfeit Plan:

The Supplier shall establish and maintain a Counterfeit Parts / Material Prevention and Control Plans using AS5553 and/or AS6174 as a guideline to maintain a counterfeit material preventive program and to ensure that no counterfeit material is delivered to NHBB. The Supplier shall notify NHBB immediately in the event of suspect counterfeit material may have been delivered to NHBB.

Software Quality Assurance:

The Supplier shall have established controls for software quality assurance per MIL-STD-52779. This requirement applies when the Supplier provides product produced using computer programs for dimensional control such as CNC equipment or computer controlled coordinate measuring machines.

Product Obsolescence:

As soon as the Supplier becomes aware of product obsolescence, the Supplier shall inform NHBB. Stability of ongoing supply based on a minimum two years future supply is required.

NHBB Supplied Material:

If applies, only materials and parts supplied by NHBB shall be used.

NHBB Property:

All NHBB supplied property becomes the responsibility of the Supplier while is in their possession. Equipment supplied must be identified, well maintained and subject to an appropriate calibration process where applicable. All NHBB supplied property must be returned when requested by NHBB.

Calibration:

The Supplier shall develop and maintain a calibration system per MIL-STD-45662, ISO 10012, or ISO 17025. All measuring and test equipment shall be calibrated to standards traceable to the National Institute of Standards and Technology (NIST).

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The Supplier shall notify NHBB within 24 hours of discovery in the event of any calibration failures that may affect any products previously supplied.

Inspection & Testing of Product:

To ensure compliance, the Supplier is responsible for the verification of all products, processes and services delivered to NHBB. If the Supplier chooses to use a sampling inspection plan, the Supplier remains responsible for 100% compliance to all requirements flowed down.

All inspection and test operations shall be satisfactorily completed prior to shipment of the product.

When the Supplier performs lot inspection instead of 100% inspection, the Supplier shall use a recognized sampling plan that conforms to ANSI/ASQ Z1.4; C=0. If any sample product or process fails to meet specified requirements the lot is to be rejected and dispositioned according to the Supplier's internal MRB system.

Final acceptance of material is subject to NHBB inspection and NHBB customer acceptance when applicable.

First Article Inspection:

Supplier classified as Direct- product and processes- are responsible to conduct and keep record of a First Article Inspection Report (FAIR) that meets the requirements of AS9102 whenever the following applies:

- A change in the design characteristics affecting firm, form, or function of the part.
- A change in the manufacturing source, process, inspection method, location of manufacture, tooling, or materials that can potentially affect fit, form or function.
- A SCAR requiring to completing a FAIR when applicable.
- The first production lot produced.
- After a break in manufacture of more than 2 years requires an update for any characteristics that may be impacted by the inactivity.

Supplier's FAIR form is not acceptable unless it mirrors the AS9102 forms.

FAIR records shall be made available when requested by NHBB.

Source Inspection (applies only when flowed down on PO)

The Supplier's products, process or services may be subject to source inspection by NHBB, representatives of NHBB or applicable government or regulatory agencies.

Source inspection requirement will be flowed down in the Purchase Order and may apply to any operation performed by the Supplier or the Supplier's sub-tier sources.

The Supplier shall provide the necessary access to effectively accomplish the source inspection.

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Non-Conforming Products:

The Supplier shall have a system for the control of non-conforming items that must include provision for identification of non-conforming, segregation and containment of such material, defective parts by quantity, definition of the nature of the defect, cause of the non conformance and corrective action authorization if applicable.

Supplier's repair of NHBB's material is prohibited unless previously authorized in writing by NHBB.

Notification of Escape:

Supplier shall immediately notify in writing to NHBB of any nonconformance product that has been previously delivered within 24 hours after being aware of the escape.

This communication shall include as minimum: affected purchase order numbers, quantities, dates of delivery and clear non-conformance statement.

The Supplier must cover all costs incurred by NHBB to correct the nonconformance.

Waivers and Deviations:

Under this contract the delegation of Material Review Board (MRB) authority by NHBB to the Supplier is not authorized. Supplier is responsible to notify NHBB of any product non conformities before the delivery of product by using the SDN and obtain approval for all nonconforming product disposition.

When a deviation is approved, the non-conforming material shall be clearly identified and a copy of the dispositioned/approved SDN included with each affected shipment. Failure to observe these requirements will result in rejection of parts.

Scrap Procedure:

NHBB product may only be scrapped by the Supplier with approval from NHBB.

If authorized, scrap shall be disposed of, in such a way that it can never be salvaged or reconfigured as fit for use. Appropriate records of the actions taken will be maintained.

Supplier Corrective Action (SCAR): (if required)

A SCAR can be issue on the following possible circumstances in response to:

- An audit where a formal SCAR is warranted.
- Significant event(s) that require immediate action.
- Performance rating or other data that shows underperforming trends.

If required a formal corrective action response is due within 15 business days of being issued from NHBB. The corrective action shall address the following:

- Containment action – to prevent supply of further non conformance (e.g. 100% inspection of any existing stock, WIP and orders processed prior SCAR issuance. Containment Actions to be completed within the first 24 hours of SCAR submission.
- Root cause investigation – to identify the specific cause(s) that allowed non conformance to develop.

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- Corrective action – specific action(s) taken to eliminate the identified root cause(s) of the nonconformance and prevent recurrence.
- Preventive action (read across) – specific action(s) taken to prevent non-conformities affecting similar products or processes.
- Verification of actions and its effectiveness – actions that will be taken to establish that the corrective actions were completed and effective.

NHBB may require completing NAQ 20-NHBB SCAR form.

The use of problem solving tools is strongly recommended for root cause analysis and may be mandated by NHBB as needed. The use of mistake proofing solutions is preferred and should be used when practical.

Statements from the Supplier indicating that the corrective action is to alert or retrain the operator, and/or increase inspection, alone, are NOT acceptable corrective actions. This sort of actions are considered insufficient and do not address the underlying root cause(s) of why the Supplier's policy, instructions, process, procedure, and/or system allowed the problem to develop and occur and not be detected.

Supplier Self-Release- Designated Supplier Quality Representative (DSQR):

Supplier with NHBB Designated Supplier Quality Representative (DSQR) authority shall establish compliance to Q.P.5.4.2.5.2

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• **SECTION TWO - SUPPLIER EVALUATION PROCESS**

Q.I. 8.3.6- Supplier Management Procedure contains the requirements related to the Supplier Evaluation Process established for NHBB Suppliers.

• **SECTION THREE – PO SPECIFIC QUALITY REQUIREMENTS**

The following paragraphs outline specific limited applicability NHBB quality requirements and form a part of the purchase order. The specific paragraphs that apply are listed on the purchase order. Exceptions to these requirements shall be documented in writing by the Supplier and approved by NHBB prior to manufacture or processing.

Q1 Government Source Inspection

Government Source Inspection (GSI) is required prior to shipment. Evidence of GSI shall be supplied with the shipment per FAR 52.266.2. Upon receipt of the purchase order, promptly notify the Government Source Representative who services your facility. Copies of purchasing documents required for Government inspection purposes shall be furnished in accordance with the instructions of the Government Representative. If a representative cannot be located immediately, notify the NHBB procurement team.

Q2 Customer Source Inspection

All work on this order is subject to inspection and test by NHBB customers prior to shipment from the Supplier’s facilities. Such verifications shall not absolve the Supplier of the responsibility to provide acceptable product. Nor shall it preclude subsequent rejection by NHBB. Notify the NHBB to schedule source inspection by the NHBB customer

Q3 NHBB Source Inspection

Source inspection is required by NHBB. The Supplier shall notify NHBB when the product is ready for inspection. NHBB will respond to schedule the product source inspection. The Supplier shall provide the necessary access to effectively accomplish the source inspection. Supplier’s measuring and test equipment, facilities, and personnel shall be made available for use by the NHBB Representative as needed.

Q4 Government Rated Contracts

Rated orders are identified in the purchase order by either DX or DO. Rated orders take preference over all other orders to meet required delivery dates. DX rated orders take preference over DO rated orders.

Q5 First Article per AS9102

First article inspection is required. Additional to the FAIR requirements in section 1- First Article Inspection, NHBB will specify the completion of FAIR to a specific order when Q5 is flowed down in the Purchase Order.

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Q6 Statistical Process Control or Histogram

Statistical process control or Histogram is required and shall be implemented on the order as defined in the Purchase Order and/or NHBB Quality Department.

The Supplier shall certify that processes used during the manufacturing of key characteristic of product delivered to NHBB were in statistical control. Data shall be submitted with product showing that process (es) maintained a minimum 1.33 CPK. A Histogram demonstrating conformance of the requirement flowed down can be supplied in lieu.

Q7 100% Visual Inspection

100% visual inspection to flow down visual acceptance criteria is required for all material shipped. CofC must state that 100% was performed.

Q8A Raw Material Test Report

For each lot or heat of material supplied on this Purchase Order, the Supplier shall furnish a copy of the original mill test report listing the material description. Including as applicable, the material name or designation, alloy, type, class, grade or condition, producer’s (mill) name and country of origin, DFAR compliance if applies, the lot or heat number and the material specification and revision to which the material complies and an identifier associating test report to the Certificate of Conformance. In addition, for:

Ferrous Material – Furnish a listing of the actual values of chemical composition and physical properties obtained from the lot or heat versus values required by the applicable material specification.

Nonferrous Material – Furnish a listing of the typical range of values (unless actual values are required by the applicable material specification or the Purchase Order) of the chemical composition and physical properties of the material, and a statement that the material supplied conforms to the requirements of the applicable material specification.

Nonmetallic Materials – Furnish a certification issued by the manufacturer of the material listing the material designation and nomenclature, the material size, the specification and revision to which the material conforms, the lot number or designation (if applicable), the date manufactured, the manufacturer’s identity and any other deliverable technical data (test results, composition, chemical or physical properties, etc.) required by the applicable specification or the Purchase Order.

Seller Furnished Raw Material - With each delivery of product(s), Supplier shall furnish the material certifications/test reports covering the material used to fill this order. The material certifications/test reports shall comply with the applicable requirements of (a) through (c) specified herein for the type of material furnished. In the event that more than one lot or heat of raw material is used by Seller, each fabricated lot of products shall be identified and/or packaged in separate lots to maintain traceability and integrity to the applicable material certifications/test reports.

Exclusion- Not required for COTS (Commercial off the Shelf) purchased products.

Q8B Pre-admission samples

Samples shall be submitted to and approved by NHBB prior to shipment of each lot of material.

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Q9 Purchased Ball Requirements

Ball Suppliers shall:

- a) Meet the latest revision of NHBB specifications: SB-2, SB-3, SB-4, SB-5, SB-6, SB-7, SB-8 or SB-9.
- b) Maintain detailed records of all inspection and applicable material certifications.
- c) Certify that production processes were in statistical control during the manufacture of product delivered to NHBB.
- d) Submit inspection and/or statistical data representative of the lot(s) shipped, for the following characteristics:
 - Ball Diameter Variation.
 - Deviation from Spherical Form
 - Surface Roughness
 - Lot Diameter Variation.
 - Ball Hardness.

Q10 Metal Ball- additional requirements

- a) Metal balls shall meet the latest revision requirements of ANSI/ABMA Std. 10
- b) Certification must include the passivation specification and method that the balls were passivated per AMS-QQ-P-35, AMS 2700, ASTM A967, and ASTM A380, latest revision.
- c) Certification must include that the balls were heat treated per AMS 2759, latest revision.

Q11 Silicon Nitride Ball Requirements I

Silicon Nitride Balls shall meet the requirements of Coorstek Cerbec Ceramic Balls. Material Specification NBD-200, latest revision.

Q12 Silicon Nitride Ball Requirements II

Silicon Nitride Balls shall meet the requirements of Coorstek Cerbec Ceramic Balls. Material Specification SN-101C, latest revision.

Q13 Lubricant Suppliers are required to:

- a. Certify that the test reports covering material as specified in the shipment indicate conformance with requirements of specification.
- b. Certification must include the lubrication manufacturing date and shelf life.
- c. Mark the NHBB Lubricant Code on the Container, labels and Certification(s).
- d. Supply a copy of the Safety Data Sheet.
- e. Supply a copy of the Certificate of Analysis if required.
- f. Unless otherwise required, 75% shelf life of lubricant must be remaining upon receipt at NHBB.

Q14 PPAP required with parts

PPAP completion per AIAG/ Production Part Approval Process manual or as agreed by Supplier-NHBB. PSW level 3 required as default for all new or updated PPAP's unless otherwise indicated by NHBB. To submit a different submission level, please contact NHBB for approval.