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POLICY NUMBER:	AQM-005
ORIGINAL ISSUE DATE	06/26/2009
REVISION DATE:	01/07/2022
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NSK AMERICAS

Supplier Quality Assurance Manual



Supplier Quality Assurance Manual

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1.0 SCOPE

- 1.1 This manual applies to external Suppliers of materials, products, processes and services provided to the following NSK Americas sites (collectively, "NSK");
- Bennington Vermont (BVT)
 - Dyersburg Tennessee (DTN)
 - Franklin Indiana (FR)
 - Liberty Indiana (LB)
 - Clarinda Iowa, Bearing (CL)
 - Clarinda Iowa, Balls (AKS)
 - Silao Mexico (NBMX)

2.0 PURPOSE

- 2.1 To describe and inform Suppliers of the core requirements to do business with NSK. This manual provides the base requirements and shall be considered the customer specific requirements (CSRs) for NSK.

3.0 GENERAL**3.1 References**

- NSK Americas web site www.nskamericas.com
- AIAG Core Tools Manuals (APQP, MSA, SPC, PPAP, FMEA) www.AIAG.org
- CQI Standards (special processes) www.AIAG.org
- ISO 9001:2015 International Quality Management System
- IATF 16949:2016 International Automotive Quality Management System
- VDA 6.3 Process Audit
- MAQMSR (Minimum Automotive Quality Management System Requirements) www.iatfglobaloversight.org
- Supplier Exchange (NSK Supplier Web Portal) <http://sa.us.nsk.com/supplyWeb/account/login>
 - Documents available on Supplier Exchange web portal
 - (This is a limited list, Supplier must access Supplier Exchange to view the full list)
 - Supplier E H & S Manual*
 - Supplier Acknowledgement Form*

Supplier Audit Workbook
Deviation Request Form
NSK Corp - Process Change Request Form
NSSA – Supplier Change Request Form
Nonconformance Chargeback Procedure
Special Product Labeling Procedure
Special Product Labels

3.2 Definitions

- **NSK Corporation** – a subsidiary of NSK Americas, primary product is bearings
- **NSSA** – NSK Steering Systems America, a subsidiary of NSK Americas, primary product is steering columns
- **Special Process** – A production method that cannot be measured, monitored or verified without destruction to the product (examples; heat treat, welding, plating, coating, molding, soldering).
- **Supplier Exchange** – NSK web portal for Supplier, used for primary Electronic Data Interface (EDI), Advanced Shipping Notices (ASN), Defective Material Notification (DMN), links to NSK documents and additional items.
<http://sa.us.nsk.com/supplyWeb/account/login>

3.3 General Requirements

This manual is required for all Suppliers in conjunction with ISO 9001:2015, AIAG Core Tools Manuals, Supplier Environmental Health & Safety Manual and referenced NSK policies. The IATF 16949 standard is also required for automotive Suppliers (see 4.4.1). NSK may audit suppliers to these requirements. It applies to all current and future purchase orders. Any additional requirements noted specifically on a contract, purchase order, drawing or specification shall be complied with. In specific cases VDA 6.3 may be required dependent on the application and who the NSK final customer is. The NSK Americas Terms and Conditions of Purchase, a copy of which can be found at <https://www.nskamericas.com/en/terms-and-conditions.html>, shall apply to all NSK Americas purchases unless otherwise agreed to in writing by an authorized representative of NSK Americas, Inc.

Each paragraph number and title in this manual matches the section number and title for ISO 9001:2015, all ISO 9001 requirements shall be met. Additional NSK customer specific requirements may be listed in a section. Several section headers are followed by the statement “No additional NSK customer specific requirements for this section”.

4.0 ISO 9001:2015 Context of the Organization

4.1 Understanding the organization and its context

No additional NSK customer specific requirements for this section.

4.2 Understanding the needs and expectation of interested parties

No additional NSK customer specific requirements for this section.

4.3 Determining the scope of the quality management system

No additional NSK customer specific requirements for this section.

4.4 Quality management system and its processes

4.4.1 Quality Management system and its processes

Automotive Suppliers

NSK requires automotive Suppliers to be certified to the current IATF 16949 standard through third-party audits. If the supplier provides product for the automotive industry and is not certified to IATF 16949, they shall develop, implement and improve a quality management system with the ultimate objective

of becoming certified to IATF 16949. These Suppliers may be audited by NSK to IATF 16949 requirements as an approach to developing Supplier quality management systems.

Non-automotive Suppliers

NSK requires non-automotive Suppliers to be certified to the current ISO 9001 standard through third-party audits. Suppliers of non-automotive products or services without ISO 9001 third-party certification may be audited to ISO 9001 requirements as an approach to developing Supplier quality management systems

Quality System Certificate

A copy of the Supplier's ISO or IATF Certificate shall be submitted to NSK upon certification or re-certification. NSK shall be notified of any changes to the certification status, including initial certification, recertification, or transfer of certification to a new Certification Body, certificate withdrawal, and certificate cancellation without replacement.

4.4.2 Quality management system and its processes**Fast Response**

The Supplier shall have a fast response method in place to communicate issues through the plant on a shift to shift basis (such as a fast response board).

Product Safety

The Supplier shall have documented processes in place to manage product safety related to product and processes which shall include at a minimum;

- Identification of product safety characteristics and statutory & regulatory safety requirements
- Special approvals for DFMEA, PFMEA and Control Plans
- Identification at point of manufacture for controls and characteristics
- Defined responsibilities for escalation and customer notification
- Training for personnel impacting product safety processes or characteristics
- Communication of product safety items through-out supply chain
- Lessons learned for new product introduction

Note: Reference section 8.2.3.1 for safety symbol.

5.0 ISO 9001:2015 LEADERSHIP**5.1 Leadership and commitment****5.1.1 General**

The Suppliers management team shall ensure that all the requirements established by this manual are met throughout the Supplier's quality management system. Suppliers are expected to support all activities necessary to meet the final Customer requirements. This may include traveling and joint participation in meetings to conduct business.

5.1.2 Customer Focus

No additional NSK customer specific requirements for this section.

5.2 Policy**5.2.1 Establishing the Quality Policy**

No additional NSK customer specific requirements for this section.

5.2.2 Communicating the quality policy

No additional NSK customer specific requirements for this section.

5.3 Organizational roles, responsibilities and authorities

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No additional NSK customer specific requirements for this section.

6.0 ISO 9001:2015 PLANNING**6.1 Actions to address risks and opportunities**

6.1.1 No additional NSK customer specific requirements for this section.

6.1.2 Contingency Plans

The Supplier shall define and document contingency plans according to risk and impact to NSK. They shall be periodically tested for effectiveness by simulation as appropriate and be reviewed annually at a minimum. As a supplement to the contingency plans, the Supplier shall have a process to inform NSK if a contingency plan is activated.

Lessons Learned

The Supplier shall have a documented lessons learned method.

6.2 Quality objectives and planning to achieve them

6.2.1 No additional NSK customer specific requirements for this section.

6.2.2 No additional NSK customer specific requirements for this section.

6.3 Planning of changes

No additional NSK customer specific requirements for this section.

7.0 ISO 9001:2015 Support**7.1 Resources****7.1.1 General**

No additional NSK customer specific requirements for this section.

7.1.2 People

No additional NSK customer specific requirements for this section.

7.1.3 Infrastructure

No additional NSK customer specific requirements for this section.

7.1.4 Environment for the operation of processes

The Supplier shall maintain its premises in a state of order, cleanliness and repair to ensure there is no negative impact on the product and manufacturing process needs. A defined method shall be implemented to maintain a state of order in the facility.

The Supplier shall meet all the requirements in the Supplier Environmental, Health and Safety Manual. The manual is available in the Supplier Exchange web portal.

Any waste generated as a result of actions performed by Suppliers, Contractors and Supplier Representatives shall be controlled so as not to impact the environment inside the building as well as the natural environment. Appropriate containers shall be used, and proper labeling attached, consistent with Local, State and Federal regulations.

Suppliers should be aware of NSK's commitment to have safe work processes and practices in the value streams that support NSK product manufacturing. Additionally, suppliers shall provide a safe work environment, compliant to applicable regulation. NSK reserves the right to validate compliance through a combination of supplier self-assessments and NSK supplier safe work practice audits.

NSK Suppliers shall abide by the tenets of respectful treatment of all employees. These items include the following of local labor laws as it applies to child labor, forced labor and compensation. Harassment and discrimination of employees

shall not be tolerated and employees shall be able to communicate openly with management regarding their work conditions without fear of reprisal.

7.1.5 Monitoring and measuring resources

7.1.5.1 General

Calibration

The Supplier shall have a documented process for managing calibration records. The procedure shall include the requirement to determine if NSK product is at risk when an out of tolerance gauge is found and notification to NSK if suspect product has been shipped. A description of the gauges, testing equipment, and measurement techniques that will be used to evaluate components may be requested by NSK. This includes, but is not limited to, drawings and details of special gauges, holding fixtures, or coordinate measuring machine (CMM) setups. Whenever practical, duplicate gauging or holding fixtures should be produced for use at NSK in order to facilitate the coordination of measurement techniques. Measurement Systems Analyses (MSAs) are required for all gauges used to measure special characteristics and measurement systems referenced in the control plan. For guidance on Measurement System Analyses the AIAG MSA manual shall be used.

7.1.5.2 Measurement traceability

Suppliers of measurement equipment, inspection, test or calibration services shall be accredited to ISO/IEC 17025 or equivalent. Calibration reports provided shall include the accreditation body logo. NSK may ask for Suppliers accreditation certificate to confirm compliance.

Internal Laboratories

Supplier internal laboratories shall have a defined scope that includes its capability to perform the required calibration services.

Non-accredited Laboratories

Calibration services without certification to ISO 17025 or equivalent are responsible to provide evidence that the laboratory meets the requirements of Section 7.1.5.3.1 of IATF 16949 and be evaluated by NSK for these requirements (Exhibit 7 Supplier Service Evaluation).

7.1.6 Organizational knowledge

No additional NSK customer specific requirements for this section.

7.2 Competence

The Supplier shall have a documented process for training and maintain evidence of training for personnel in any job affecting product quality, including contract personnel, and show that a determination of competency has been made.

Internal Auditor Competence

The Supplier shall have a documented process to verify that internal auditors are competent and shall maintain a list of qualified internal auditors. Personnel performing quality management system, product, process, special process or second party audits shall be determined to be competent concerning the specific audit they are performing.

7.3 Awareness

No additional NSK customer specific requirements for this section.

7.4 Communication

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No additional NSK customer specific requirements for this section.

7.5 Documented information**7.5.1 General**

The Suppliers quality management system shall be documented and include a quality manual which can be a series of documents.

Record retention

Document Type	Retention Period
PPAP	Life of Product +1 yr.
Purchase Orders	5 years
Process Data	5 years
Tool	20 years
Inspection/Testing	20 years
Calibration	20 years
Training	20 years
Drawing/Specification	20 years
Maintenance	20 years
Manufacturing Work Instructions	20 years
Audit (Internal and Supplier)	20 years
Traceability	20 years
Problem Solving/Corrective Action	20 years
Change Point	20 years

7.5.2 Creating and updating

Where the Supplier uses NSK documents, instructions or other documents of external origin, the organization shall ensure that the appropriate revision level is being used.

7.5.3 Control of documented information

7.5.3.1 No additional NSK customer specific requirements for this section.

7.5.3.2 No additional NSK customer specific requirements for this section.

8.0 ISO 9001:2015 Operation**8.1 Operational planning and control****APQP**

Advance Production Quality Planning is required, for guidance on product/process planning the AIAG APQP manual shall be used.

NSK Americas Supplier Web Portal

All direct material Suppliers shall have the capability to accept purchase orders via the Supplier Exchange web portal unless otherwise approved by NSK. The Supplier should contact NSK to get setup for the use of Supplier Exchange.

Supplier Exchange link: <http://sa.us.nsk.com/supplyWeb/account/login>

8.2 Requirements for products and services**8.2.1 Customer communication**

The Supplier shall have the ability to communicate necessary information in the NSK specified language and format (e.g. computer-aided design data, electronic data, advanced shipping notices (ASN's), etc.). NSK's official business language is English.

The Supplier shall submit product/component development information in the NSK designated format determined at project kick-off if a specific format is requested.

8.2.2 Determining the requirements for products and services

All NSK drawing dimensions shall be met unless otherwise approved by NSK. For Suppliers of actual or potential hazardous substances, a Safety Data Sheet (SDS) shall be provided to NSK prior to shipment of materials to NSK. NSK reserves the right to request inspection data for any characteristic at any time.

8.2.3 Review of the requirements for products and services

8.2.3.1 Manufacturing Feasibility

The Supplier shall conduct an analysis to determine if it is feasible that the Suppliers manufacturing process is capable to consistently produce product that meets all NSK requirements. The manufacturing feasibility analysis shall be documented and performed by a multifunctional team. Capacity analysis shall be included.

Reference AQM-017 F NSK Run @ Rate Matrix in Supplier Exchange.

Special Processes

The Supplier shall determine if any special processes are being performed and identify them. This determination shall be based on the AIAG CQI Standards for special processes (see section 9.2.2).

Statutory and Regulatory

NSK communication of statutory and regulatory requirements to the supplier may take place through direct communication such as Engineering prints, specifications and/or from our Environmental Department or through our Environmental Manual & Policies, available on Supplier Exchange.

Upon request the Supplier shall report to NSK on the conformance to all applicable statutory and regulatory requirements of all purchased products or material used in the product delivered to NSK. NSK may ask the supplier to submit confirmation of compliance. The Supplier's response to NSK's request may be reflected in the supplier score card.

Special Characteristic NSKA Suppliers

- Shall be identified on the PFMEA's, Control Plans, Standard Operating Procedures, Work Instructions and Check sheets.
- If the required process capability cannot be met and 100% inspection is not possible to due to the destructive nature of the inspection, one of the following shall be implemented. Either addition inspection or process parameter monitoring. NSK approval will be required.

For guidance on control of special characteristics the AIAG SPC manual shall be used.

Safety Critical Characteristic NSKA Suppliers

The following requirements shall apply to Safety Critical and Safety Regulated components, assemblies or processes:

- Defined process monitoring.
- Increased part monitoring.
- Nonconforming product control with localized disposition.
- Error Proofing in process or directly following processing prior to movement to the next process may be required.
- Downstream product verification to prevent flow out.

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Adherence to applicable NSK Special Process standards.
The NSK Safety Critical Self-Assessment **Δ may be required annually as applicable** and may be verified on site by NSK periodically.

NSK Suppliers shall ensure that all safety critical item requirements are passed down to sub-tier Suppliers when applicable.

Special Characteristic NSSA Suppliers

Special characteristics are product characteristics or manufacturing process parameters which can affect safety or compliance with regulations, fit, function, performance or subsequent processing of product.

NSSA labels special characteristics as , , , , and .



:Safety Characteristics that may affect safe vehicle operation.



:Safety Regulation Characteristics that may affect compliance with government standards.



:Functional Characteristics that may affect performance requirements, fit/function, or ease of assembly either at NSSA or the NSSA customer.








:High Impact Characteristics that severely affect the operation of the process or subsequent operations. Non-conformances in these characteristics are related to improper manufacturing and/or assembly operations that may result in subsequent operations being skipped or performed incorrectly.



:Black Square. Customer interface or attachment point.

The following table details manufacturing Statistical Process Control (SPC) requirements for NSSA special characteristics. For guidance on Statistical Process Control the AIAG SPC manual shall be used.

ΔSpecial Characteristic	ΔDescription	ΔPpk PPAP Requirement	ΔCpk Production Requirement
	Safety	> 1.67 Acceptable 1.33 ≤ 1.67 Additional inspection needed or as approved by NSK < 1.33 Not Acceptable, 100% inspection needed or as approved by NSK # See note	> 1.67 Acceptable 1.33 ≤ 1.67 Additional inspection needed or as approved by NSK < 1.33 Not Acceptable, 100% inspection needed or as approved by NSK # See note
	Safety Regulated	> 1.67 Acceptable 1.33 ≤ 1.67 Additional inspection needed or as approved by NSK < 1.33 Not Acceptable, 100% inspection needed or as approved by NSK # See note	> 1.67 Acceptable 1.33 ≤ 1.67 Additional inspection needed or as approved by NSK < 1.33 Not Acceptable, 100% inspection needed or as approved by NSK #See note
	Functional/Customer Interface	> 1.67 Acceptable 1.33 ≤ 1.67 Additional inspection needed or as approved by NSK < 1.33 Not Acceptable, 100% inspection needed or as approved by NSK # See note	> 1.67 Acceptable 1.33 ≤ 1.67 Additional inspection needed or as approved by NSK < 1.33 Not Acceptable, 100% inspection needed or as approved by NSK #See note
	High Impact	> 1.67 Acceptable 1.33 ≤ 1.67 Additional inspection needed or as approved by NSK < 1.33 Not Acceptable, 100% inspection needed or as approved by NSK # See note	> 1.67 Acceptable 1.33 ≤ 1.67 Additional inspection needed or as approved by NSK < 1.33 Not Acceptable, 100% inspection needed or as approved by NSK # See note
	Black Square	> 1.67 Acceptable 1.33 ≤ 1.67 Additional inspection needed or as approved by NSK	> 1.67 Acceptable 1.33 ≤ 1.67 Additional inspection needed or as approved by NSK



		< 1.33 Not Acceptable, 100% inspection needed or as approved by NSK # See note	< 1.33 Not Acceptable, 100% inspection needed or as approved by NSK # See note
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Conformance to capability requirements shall be satisfied by material certifications with each lot of material for the following properties:

- Mechanical properties of coil steel
- Teflon coating thickness for Teflon-coated steel

NSK reserves the right to request inspection data for any part characteristic at any time.

Special Characteristics NSK Corporation Suppliers
 NSK Corporation Special Characteristics Chart

ΔSpecial Characteristic	ΔDescription	ΔPpk PPAP Requirement	ΔCpk Production Requirement
 or end customer symbol	Safety Critical	> 1.67 Acceptable 1.33 ≤ 1.67 Additional inspection needed or as approved by NSK < 1.33 Not Acceptable, 100% inspection needed or as approved by NSK # See note	> 1.67 Acceptable 1.33 ≤ 1.67 Additional inspection needed or as approved by NSK < 1.33 Not Acceptable, 100% inspection needed or as approved by NSK # See note
 or end customer symbol	Critical	> 1.67 Acceptable 1.33 ≤ 1.67 Additional inspection needed or as approved by NSK < 1.33 Not Acceptable, 100% inspection needed or as approved by NSK # See note	> 1.67 Acceptable 1.33 ≤ 1.67 Additional inspection needed or as approved by NSK < 1.33 Not Acceptable, 100% inspection needed or as approved by NSK # See note

Note: Special Characteristics Attribute Check: Establish a data collection strategy to define how you will sample lots over time. Use c=0 sampling plan for lot acceptance sampling. Historical process % defective rate as the basis of an analysis is permitted.

Additional Attribute Data Requirements:

- Must be identified on the PFMEA's, Control Plans, Standard Operating Procedures, Work Instructions and Check sheets
- Define a defective unit (what it is and is not)
- Verify the measurement system with an attribute gauge study

- Establish a data collection strategy to define how you will sample lots over time.

8.2.3.2 No additional NSK customer specific requirements for this section.

8.2.4 Changes to requirements of products and services

No additional NSK customer specific requirements for this section.

8.3 Design and development of products and services

8.3.1 General

No additional NSK customer specific requirements for this section.

8.3.2 Design and development planning

A multidisciplinary approach shall be used to prepare for product realization including:

- Development and review of FMEA including actions to reduce potential risks
- Development and monitoring of special characteristics
- Development and review of control plans

8.3.3 Design and development inputs

No additional NSK customer specific requirements for this section.

8.3.4 Design and development controls

General

The Supplier shall have people, equipment and facilities to support all NSK sample request and production requirements that will ensure no interruption to NSK manufacturing processes. In cases where the Supplier is considering off-site work, NSK shall be notified and give approval before the Supplier can proceed. The Supplier shall maintain control of any outsourced services and ensure that all NSK requirements are being met.

For pre-production parts all characteristics shall conform to NSK requirements unless otherwise agreed to in writing by NSK. Additional requirements may be implemented before the start of production.

Pre-production and PPAP parts shall be labeled in accordance to the Supplier Special Product Labeling procedure (AQM-015) located on Supplier Exchange. Supplier Exchange (NSK Supplier Web Portal)

<http://sa.us.nsk.com/supplyWeb/account/login>

Control Plan & FMEA

The applicable control plan (prototype, pre-launch, mass production) shall be available at the appropriate stage during the APQP process. The control plans shall take into account the Design FMEA (if applicable) and manufacturing Process FMEA outputs. The control plan shall be reviewed and updated when changes occur according to the guidelines in the AIAG APQP manual. Changes to the control plan shall be submitted to NSK via PPAP level III unless otherwise agreed to by NSK. The control plan shall address every step in the PFMEA. The PFMEA shall be reviewed if a Customer Quality Concern occurs. For guidance on Failure Mode and Effects Analysis the AIAG FMEA manual shall be used.

PPAP

The PPAP shall be submitted to NSK at the requested submission level on or before the date requested by NSK. All PPAP documentation shall be submitted in English unless otherwise approved by NSK. Any certification provided as part of the PPAP submission shall be accompanied by a laboratory scope. Level III PPAP shall be the default for PPAP requests unless otherwise approved by NSK. For guidance on PPAP the AIAG PPAP manual shall be used.

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Process Flow Charts, Failure Mode and Effects Analysis (FMEA), and Control Plans may be requested for review and approval by NSK prior to PPAP submission.

IMDS

Suppliers shall notify NSK when a submission has been made in the International Material Data System (IMDS) and communicate the relevant ID number.

Suppliers providing material shall submit a copy of the approved IMDS submission noting acceptance status with the PPAP submission and may be required to resubmit based on change of revision level, mass, material or substance content. Suppliers providing only a process or service that does not add material are not required to submit IMDS.

NSK IMDS ID number is 5771.

8.3.5 Design and development outputs

Suppliers shall confirm NSK requirements for packaging and logistics.

8.3.6 Design and development changes

Change made after submission of prototype samples shall be communicated to NSK and may require NSK approval.

8.4 Control of externally provided processes, products and services**8.4.1 General**

The Supplier shall have a documented supplier selection process. The Supplier selection process should follow CQI-19.

The Supplier shall ensure that all NSK sub-tier Suppliers (including NSK directed suppliers) provide products, processes and services conforming to NSK requirements. The Supplier shall have a receiving process to ensure the quality of externally provided products.

8.4.2 Type and extent of control**NSK Sub-tier Suppliers**

The Supplier shall have a documented process with criteria to evaluate Sub-tier Supplier performance to ensure conformity of product provided. The Supplier shall be responsible for the quality of the product received from the Sub-tier Supplier. This applies to both directed and non-directed Sub-tier Suppliers.

The Sub-tier Suppliers shall have a documented system to trace product to a lot number and date of manufacture or processing. Sub-tier suppliers should follow the requirements of CQI-28 for guidance on traceability.

NSK Supplier audits may be required as part of a corrective action resulting from poor Supplier performance rating or as required by NSK customers. Typically, NSK will conduct assessments only on Suppliers that supply direct to NSK.

However, NSK reserves the right to selectively conduct Supplier Quality Assessments on Sub-tier Suppliers.

For NSK Corporation suppliers of steel bearing products traceability to heat number shall be maintained by sub-tier suppliers. Sub-tier Supplier lots shall not contain more than one steel heat number concerning bearing steel components at any time in the product value stream (see section 8.5.2).

8.4.3 Information for external providers

The Supplier shall pass down all applicable safety/special characteristics and process characteristics to sub-tier suppliers to the point of manufacture.

8.5 Production and service provision**8.5.1 Control of production and service provision
Work Instructions**

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The Supplier shall prepare documented work instructions for all employees having responsibilities for the operations that impact conformity to product requirements. These instructions shall be accessible for use at the workstations. They shall be communicated to and understood by the employees performing the work. The work instructions shall be in the language of the personnel responsible to follow them.

Job Set-ups

Job set-ups shall be verified whenever performed, such as initial run of job, material changeover or job change. Evidence of this verification shall be maintained. Work instructions shall be available for set-up personnel. The Supplier shall use statistical methods of verification when applicable. First-off/Last-off verification shall be performed.

Tooling

Any tooling owned by NSK (this includes manufacturing, test and inspection) shall be permanently marked so the ownership of each item is visible unless otherwise approved by NSK. The Supplier shall maintain the tooling and equipment in good working order for the life of the program + service." Once it has been determined that tooling is no longer required, the Supplier shall formally request in writing to NSK to scrap or de-commission tooling and receive authorization to proceed in writing and retain this documentation with tooling records.

8.5.2 Identification and traceability**Lot Control and Traceability**

The Supplier shall have a documented process to define the requirements for lot traceability, CQI-28 should be used as a guideline for traceability. This process shall be based on risk and should take into account items such as PFMEA and safety/special characteristics. The process shall ensure that a clear start point (an occurrence that caused non-conformance) and a clear stop point (effective containment) can be established.

The lot traceability method shall define the reasonable lot sizes based on the risk analysis. The definition of lot sizes shall be documented in the procedure (examples: production shift, quantity, production interruptions). Supplier lot numbers shall be traceable to raw material lot numbers through all stages of production, including components, processes and shipments to NSK.

Lots shall not contain more than one steel heat number concerning bearing steel components.

A new lot number should be assigned for all significant process variations.

Examples include, but are not limited to, material batches, tooling and equipment setups, and operator changes (if the process is highly dependent on operator skill).

Only one lot should be shipped on a pallet unless approved by NSK. However, documentation shall be provided indicating all lots, part numbers and quantities provided on a mixed pallet. If mixed pallets are shipped without NSK approval, each pallet may be received as one lot at NSK. If defective material is found, the Supplier shall be responsible for any associated liabilities with the larger quantity of product resulting from the mixed pallet unless evidence can be shown that NSK approved the mixed pallet shipments.

Mixed pallet shipments with safety critical parts are not allowed except for special circumstances that have been approved by NSK.

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FIFO

All product shall be shipped on a "first in/ first out" (FIFO) method. FIFO shall also be applied to stock room inventory as product is pulled to be used for production.

In certain cases when strict FIFO is not possible (e.g. some steel MFG processes) the Supplier shall maintain documented evidence of the specific situation that NSK has approved where FIFO is required. In these cases, the Supplier shall maintain FIFO as close as possible.

Labeling

The label shall include a 6-digit manufacturing date code (month-day-year). For example, product produced on April 9, 2019 will have the date code 040919.

This date code shall appear on both the label and the packing list.

An alternate labeling method may be used if approved by NSK. Supplier label requirements for special circumstances (AQM-015 NSK Supplier Special Product Labeling) can be found on Supplier Exchange.

<http://sa.us.nsk.com/supplyWeb/account/login>

8.5.3 Property belonging to customers or external providers

No additional NSK customer specific requirements for this section.

8.5.4 Preservation

No additional NSK customer specific requirements for this section.

8.5.5 Post-delivery activities

No additional NSK customer specific requirements for this section.

8.5.6 Control of changes**Change Management**

The Supplier shall have a documented process to control and react to changes that impact product realization. The process shall include the question concerning if customer notification is needed.

Notification Required

NSK shall be notified of any planned changes to part design, manufacturing location, or manufacturing supply chain.

Additionally, for production-approved parts, the following changes require NSK notification prior to implementation and PPAP approval. This is a limited list, additional items listed in AIAG PPAP manual also apply.

- Any changes to components, assemblies or processes either defined as safety critical or affecting a safety critical element shall require notification to NSK regardless of perceived level of change.
- Changes to part software updates and modifications
- Change to Manufacturing method, machine or equipment
- Any change affecting a special characteristic on related parts

In cases where customer notification is needed, NSK shall be notified at least 90 days prior to implementation of the change. Written approval from NSK is required prior to implementing the proposed change. AQM-015 NSK Supplier Special Product Labeling procedure shall be followed after implementation of the change.

Notification Method NSSA

NSSA Suppliers shall complete an NSSA Supplier Change Request (NSSA-PUR-FRM012) form and submit it to their assigned NSSA Buyer. The form can be accessed on the Supplier Exchange portal.

Notification Method NSK Corporation Supplier

NSK Corporation Suppliers shall complete the appropriate form, either NSK Corp. Process Change Request form or NSK Corp. Deviation Request form and submit to the NSK Corp. Procurement Specialist. The forms can be accessed on the Supplier Exchange portal.

8.6 Release of products and services

General

The Supplier shall ensure that the planned arrangements to verify the product meets requirements have been met and are documented as specified in the control plan.

Layout Inspection

Layout inspection shall be completed and submitted to NSK as requested for each individual program.

8.7 Control of nonconforming outputs

8.7.1 General

The Supplier is responsible to provide product that meets all NSK design requirements and specifications. A documented process shall be defined for disposition of nonconforming product not subject to rework or repair. Nonconforming product shall be immediately tagged and/or placed in an appropriate container such as a red scrap bin or locked box. The Supplier shall not ship any product that does not meet all NSK requirements unless a deviation request is approved by NSK. In the event that nonconforming product is shipped NSK shall be notified immediately.

Safety Critical Nonconforming Condition

In the event that a nonconforming condition is found for a safety critical product, assembly or process, the following controls shall be utilized.

- Stop the production/process.
- Inform top management of the issue.
- Quarantine all suspect product to last known good material.
- Perform root cause analysis of the issue.
- Implement a controlled restart with verification.

Nonconforming Product at NSK

If nonconforming product is found by NSK, NSK will generate a Defective Material Notice (DMN) in the Supplier Exchange web portal. Acknowledgement of the DMN is required within 24 hours. Defective product may be returned to the Supplier. Any returned product will affect the Supplier's quality metric.

If requested, the Supplier shall initiate containment activities at the NSK location within 24 hours of notification of the problem. Containment activities may include sorting, rework, or replacement. Third party services may be required.

If NSK is required to sort and/or rework nonconforming product to maintain production requirements, the Supplier may be charged for the work.

Third Party Sort Company

In the event the Supplier uses a third-party sort company, the Supplier shall obtain NSK approval **Δ and provide an NSK non-disclosure agreement (NDA) signed by the sort company** prior to any work performed. An NSK Non-disclosure Agreement (NDA) must be signed and provided to NSK before the third-party sort company. The Supplier shall ensure that the Sort Company complies with the NSK Terms and Conditions. Further, the Supplier shall be liable for any claims which result from the services provided by the Sort Company, including, but not limited to breaches of the NSK Terms and Conditions.

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NSK can provide specific pre-approved Sort Companies that can be used, if requested.

The instructions for the sort work to be performed shall be approved by NSK before any work can be done.

Special Product Labeling

Certified product shall be labeled per AQM-015 NSK Special Product Labeling procedure until corrective actions have been approved and verified. This includes sorted and reworked product to the corrective action clean point.

Nonconforming Product Liability

In cases when the Supplier is responsible for nonconforming product, they shall be liable for all costs associated with the sorting, handling and disposition. This may include, but is not limited to, engineering costs, manufacturing downtime, test lab costs, supervision costs, and administrative costs. The Supplier may also be responsible for the cost of any customer-related activities imposed on NSK if the root cause is found to be defective product from the Supplier. This includes, but is not limited to, sorts of finished product at NSK customers, field actions, or recalls.

Rework or Repair of Nonconforming Product

If rework or repair is performed on NSK product, the Supplier shall conduct risk analysis (such as FMEA) methodology to assess risks in the rework/repair process prior to a decision to rework/repair the product. The Supplier shall obtain approval from NSK prior to performing rework/repair on NSK product. Any work other than the NSK approved process shall be approved by NSK. The Supplier shall retain documented information concerning the quantity, disposition, disposition date and applicable traceability of rework/repair product.

8.7.2 No additional NSK customer specific requirements for this section.

9.0 ISO 9001:2015 Performance evaluation**9.1 Monitoring, measurement, analysis and evaluation****9.1.1 General****Safe Launch Plan**

All new parts supplied to NSK shall follow a Safe Launch Plan unless waived by NSK. NSK may also require Safe Launch in cases of significant process changes. The Safe Launch plan shall include additional off-line inspection for a predetermined time or quantity of parts after PPAP approval. The Safe Launch Plan shall be documented and include the following details:

- Minimum duration. (# of parts, # of runs, # of production days, etc.)
- Labeling requirements
- Scope (items to be inspected, inspection method, inspection frequency)
- Exit criteria (maximum QA defects, scrap rate, etc.)

The Supplier shall collect and maintain internal data documenting nonconformances found during the Safe Launch period. Corrective actions shall be implemented to eliminate non-conformances. Safe Launch data shall be provided to NSK upon request.

9.1.2 Customer satisfaction

The Supplier shall implement a method to determine NSK customer satisfaction.

9.1.3 Analysis and evaluation

No additional NSK customer specific requirements for this section.

9.2 Internal audit

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9.2.1 No additional NSK customer specific requirements for this section.

9.2.2 General

The Supplier shall have a documented internal audit process that covers the entire quality management system, manufacturing processes and product audits. All QMS processes and manufacturing processes shall be audited over no more than a 3-year period.

Special Process Audits

All special process CQI assessments at each Supplier and Sub-tier supplier manufacturing site shall be assessed annually using the current AIAG CQI Assessments. An assessment is also required following any process and/or changes of special process equipment or additions.

Annual CQI self-assessments shall be completed before the anniversary date of the previous year and provided to NSK **Δ upon request**. NSK reserves the right to review and approve Supplier CQI self-assessments.

QMS Self-assessment

If the Supplier is not IATF 16949 certified, they should complete an annual self-assessment using NSK document Supplier Audit Workbook AQM-005 and may be subject to an NSK on-site audit. Supplier self-assessments should be submitted to NSK Procurement/Purchasing or NSK Quality Assurance.

9.3 Management review

9.3.1 General

Management review shall be conducted at a minimum annually.

9.3.2 Management review inputs

No additional NSK customer specific requirements for this section.

9.3.3 Management review outputs

The Supplier shall document and implement an action plan when performance targets are not met.

10.0 ISO 9001:2015 Improvement

10.1 General

No additional NSK customer specific requirements for this section.

10.2 Nonconformity and corrective action

10.2.1 No additional NSK customer specific requirements for this section.

10.2.2 The Supplier shall have a documented process for problem solving. Corrective action activities shall include at a minimum; containment, root cause analysis, systemic corrective action implementation, similar impact, verification of corrective actions, reviewing and updating of related documents such as control plan or PFMEA.

The Supplier shall upload all relevant corrective action activity into Supplier Exchange unless otherwise directed by NSK.

Corrective action activity maximum timing unless otherwise approved by NSK:

- Containment shall be completed within 24 hours
- Corrective action determination within 7 days
- Corrective action implementation within 30 days

NSK may request corrective actions in a shorter timeframe depending on critical issues or customer requirements.

NSK approval shall be required to allow additional days/time for any of these activities.

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NSK may make a “Request for Information” (RFI). RFIs will not have a negative impact on the Supplier’s score if the response and closure expectations are met. Upon review of information, an RFI may be elevated to require a corrective action.

Certified material shall be provided by the timing agreed to with NSK.

10.3 Continual improvement

The Supplier shall have a defined and active continual improvement process in place.

(The current revision changes are marked with a delta symbol Δ and highlighted in yellow.)

Attachment / Exhibit
<i>Reference Supplier Exchange portal for NSK documents</i>