



**NN BALL AND ROLLER, INC.  
SUPPLIER QUALITY  
MANUAL**

## **SUPPLIER QUALITY MANUAL**

### ***INTRODUCTION***

High quality of purchased products is essential to assure the success the NN Ball and Roller, Inc. in the world marketplace. NN believes in mutually beneficial, long-lasting relationships with customers and selected suppliers. Attaining World-Class Quality (examples: zero functional defectives and 100% on-time delivery) requires exceptional teamwork between NN and its supplier base to achieve mutually satisfactory performance. The emphasis in this Supplier Quality Manual document is on defect prevention and documented manufacturing capability improvement rather than defect detection during our production or customer use. The prevention approach is advantageous to all because it reduces internal costs of lot rejections, rework, and scrap, and accelerates time-to-market of new products and manufacturing cycles. Defect prevention is the cornerstone of NN's quality system derived through sound quality planning, proven process capabilities, teamwork, and use of meaningful statistical techniques to reduce variability around appropriate targets. By application of the system elements outlined in this document, suppliers will be able to provide the quality products necessary for mutual success and to satisfy NN's customer quality requirements. Each supplier is required to build on these elements to develop an effective quality system. Supplier quality assurance systems must be effective in assuring that only conforming material and components reach NN plants and NN customers, in view of the severe costs, potential litigation, and commercial implications of field failures and product recall. Overall, NN Ball and Roller, Inc. favors reducing its supplier base to those suppliers who strive to provide maximum value to us and our customers through outstanding performance on quality, price, and on-time delivery.

## SUPPLIER QUALITY REQUIREMENTS

### 1. Shared Responsibilities

- A. NN Ball and Roller, Inc. must provide clear, concise requirements and expectations for purchased materials and services. Engineering changes must be communicated in a timely manner recognizing supplier leadtime requirements. Suppliers must be provided with immediate feedback regarding defective lots.
- B. NN Ball and Roller, Inc. must produce documented evidence that they have checked the Suppliers print or specifications for conformance when applicable.
- C. The Supplier has the responsibility to develop and maintain an effective system for control of quality to ensure that NN Ball and Roller, Inc. receives defect-free materials, processes, and/or components. NN Ball and Roller, Inc. is most willing to assist suppliers in developing or improving their quality systems.
- D. Both NN Ball and Roller, Inc. and Suppliers have an obligation to provide end-product users with optimum value. We encourage and pledge to carefully evaluate Suppliers' ideas for cost reduction and value improvement. We stress the supplier's role in this effort.
- E. Suppliers must be candid about fully understanding NN Ball and Roller, Inc.'s requirements and voicing reservations about compliance.

**NOTE:** NN Ball and Roller, Inc. recognizes that small suppliers may not have established all elements of a formal quality system as is necessary in a large multi-faceted organization. In these cases, consistency of product quality delivered will be the major criterion for approval.

## **SUPPLIER QUALITY REQUIREMENTS**

### ***OBJECTIVE***

To improve the quality of products and services supplied to NN Ball and Roller, Inc. in pursuit of minimum cost and value to NN Ball and Roller, Inc. customers. Additionally, to communicate the realities of world-wide competition to the NN supplier base as a common understanding for long-term relationships.

### ***SCOPE***

This document applies to external suppliers of all products and services to all NN Ball and Roller, Inc. locations and is a part of all purchase orders issued by NN Ball and Roller, Inc.

### ***REFERENCE DOCUMENTS***

ISO-9000, Quality Management and Quality Assurance Standards - Guidelines for Selection and Use

ISO/TS16949:2002, Quality Management System

ECP0009, Quality Survey

ECP0084, Supplier Evaluation Request

ECP0012, Supplier Quality Notice

ECP0017, Initial Sample and Pre-Production Inspection Report

### ***SUPPLIER SELF-ASSESSMENT***

Established and would-be suppliers shall complete the *NN Supplier Survey*.

### ***PRODUCT APPROVAL***

Approval of product requires full agreement on product specifications, evidence of quality planning to achieve 100% quality, submission and approval of initial samples, and confirmation/notification of the supplier that specifications have been met.

### ***QUALITY PLANNING***

Suppliers shall define formally how items will be assessed at each stage of their manufacture. This plan shall include the type of measuring instrument, frequency of use, and reaction plan for non-conformances. The plan shall state that zero defects is the standard of performance expected from NN Ball and Roller, Inc.

### ***DOCUMENTATION AND TRACEABILITY***

Material heat traceability is essential for all NN balls and rollers. Shop travelers or move tickets shall indicate history and status of materials at all times.

### ***INITIAL SAMPLES***

Before full scale production, suppliers shall submit samples to NN Ball and Roller, Inc. which represent the processes which will be used. Samples and data shall be sent to NN's Quality Assurance Department using the Initial Sample and Pre-Production Inspection Report form ECP0017. Dimensional and metallurgical data may be required. NN will inspect and approve samples and notify supplier to proceed with production. Non-conformances identified in this phase will require resubmission.

### ***ON-GOING PRODUCTION***

When the product approval process is complete, production may begin, in accordance with quantities scheduled. Zero defects remains the quality standard throughout production regardless of interruptions or delays. Initial flow control methods such as increased inspection are encouraged during the early stages of production.

### ***DELIVERY PERFORMANCE***

The quality of delivery must be 100% in accordance with the schedule on the NN purchase order.

### ***SUPPLIER NON-CONFORMANCES***

Non-conforming product or suspect product shall not be shipped to NN without prior approval from NN's Quality Assurance Department. If non-conforming material is found at NN, the supplier shall be notified using a *Supplier Quality Notice*.

### ***TOTAL QUALITY MANAGEMENT***

Suppliers are encouraged to use management tools which create an environment for continuous improvement such as business and process performance measures, team problem identification and solution, training of employees, easy-to-see control of quality, and control of process input values whenever possible.

### ***SUPPLIER QUALITY SYSTEM ASSESSMENT***

NN Ball and Roller, Inc. reserves the right to assess suppliers, either partially or fully.

Partial assessment consists of proof of current quality system registration, copies of control plans and process failure modes effect analysis for products delivered to NN.

Full assessment consists of:

- supplier self-assessment in accordance applicable quality standards;
- review of supplier's quality system manual by an NN assessor;
- on-site assessment of quality system conformance by an NN assessor;
- analysis and evaluation of assessment results by an NN quality team; and
- reporting of assessment results to the supplier including recommendations.

As indicated previously, small suppliers, i.e., those with less than thirty (30) employees are not subject to formal quality system assessment to an internalized standard. For these suppliers, consistency of product quality delivered will be the major criterion for approval. However, appropriate gauging, control planning, and outgoing audits are to be used by such suppliers.