

Great Dane

SUPPLIER GUIDE

REV D



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Great Dane

QUALITY SYSTEM REQUIREMENT

SECTION ONE



In This Section

- 1.1 Quality System
- 1.2 Quality Manual & Procedure
- 1.3 Control of Sub-tier Suppliers

1.1 Quality System

Required Quality System

Great Dane recommends that each Supplier maintains an effective quality system that conforms to the IATF16949 requirements. Certification by an accredited certification body is highly recommended.

In addition, the Supplier must meet all other requirements of this manual.

1.2 Quality Manual & Procedure

Required Documents & Notifications

Upon request, the Supplier must furnish Great Dane with a controlled copy of the Supplier's Quality Manual and supporting procedures. The Supplier must notify Great Dane of any changes to the Supplier's quality system, top-level management, and/or quality management.

1.3 Control of Sub-tier Suppliers

Required Controls

The Supplier is responsible for the quality of materials and components provided by their sub-tier Suppliers and subcontractors.

NOTE: This does not include Great Dane-provided material.

Great Dane Suppliers must impose controls on their sub-tier Suppliers that provide quality results and documentation comparable to the controls applied to Suppliers by Great Dane.

Great Dane Involvement

Where appropriate, Great Dane performs the following:

- Specifies the sub-tier Suppliers that may be used.
- Evaluates and certifies the sub-tier Supplier's facilities.
- Assists the Supplier in controlling the sub-tier Supplier.

1.3 Control of Sub-tier Suppliers cont...

Typically, this occurs when the sub-tier Supplier is an essential component of the supply-chain process.

Great Dane Evaluation of Sub-Tier Suppliers

Great Dane reserves the prerogative to evaluate the quality system and records of such sub-tier Suppliers as necessary. In the event of any Great Dane involvement, it does not absolve the Suppliers of the ultimate onus of its sub-tier Suppliers and sub-contractors quality performance.

SUPPLIER APPROVAL PROCESS

SECTION TWO



In This Section

- 2.1 Overview
- 2.2 Document Audit
- 2.3 On-Site Assessment

2.1 Overview

Approval Requirement

All Suppliers of production materials to Great Dane should be Approved Suppliers. The Supplier Approval Process consists of the following three Approval elements:

- A Supplier Assessment Survey completed by the Supplier. A document audit of the Supplier's quality system procedures, if required.
- An on-site assessment, if required.

Process Initiation

If the Purchasing group determines that a Supplier potentially fits within Great Dane supply chain needs, the Purchasing group requests that the Supplier complete a Supplier Assessment Survey (CORP5QA-002). When the Supplier returns the questionnaire, a Purchasing designate reviews the questionnaire with the SQE (or Quality designee) to determine whether to proceed with approval of the Supplier and which approval elements are required

2.2 Document Audit (if required)

2.3 On-Site Assessment (if required)

Components

The Purchasing/Commodity Manager, R&D Engineer, and/or SQE typically performs an on-site assessment of the Supplier's facility. Other Great Dane personnel may also participate. The Supplier will be given a minimum of 15 days notice of such assessments. These on-site assessments include the following components:

- Quality System audit
- Business assessment
- Manufacturing process assessment

These assessments are described below.

2.3 On-Site Assessment (if required) cont...

Quality System Audit

A Quality System audit determines whether the Supplier's quality system is in place and functioning effectively.

Business Assessment

A Business assessment determines whether the Supplier has the needed financial resources, production capacity, and other business resources needed to fulfill Great Dane volume production needs and continuity of supply.

Manufacturing Process Assessment

A Manufacturing process assessment determines whether the Supplier has the needed technical resources, including production and inspection equipment, facilities, engineering resources, manufacturing process controls, etc.

Approval

If the assessment team determines that the Supplier meets all of the Great Dane requirements, Great Dane awards the Supplier with Approved status. Approved Suppliers are eligible to bid on new business and supply production materials.

PART QUALIFICATION

SECTION THREE



In This Section

- 3.1 Overview
- 3.2 Approved Supplier List
- 3.3 Failure Mode & Effects Analysis
- 3.4 First Article Checklist
- 3.5 Control Plan
- 3.6 Assembly Bill of Material
- 3.7 Pilot Fabrication
- 3.8 Sub-Supplier Certification
- 3.9 Material Safety Data Sheets
- 3.10 Supplier Gages & Standards
- 3.11 Gage Repeatability & Reproducibility Studies
- 3.12 Gage/Standard Correlation
- 3.13 Process Capability
- 3.14 First Article Inspection
- 3.15 Part Qualification

3.1 Overview

Approval Requirement

All Suppliers of production materials to Great Dane are required to complete a PPAP level 3 submission. Exceptions are for noncritical components and are jointly approved by VP Procurement, VP Engineering, and Executive Director Corporate Quality.

3.2 Approved Supplier List

Qualification

Great Dane Purchasing maintains a list of the approved Supplier(s) for each production part. Only Approved Suppliers are allowed to ship volume production to Great Dane. Suppliers must successfully complete the general Supplier Approval Process described in section 2 and pass the Part Qualification requirements listed below to a specific production part or material (Part Number).

3.3 First Article Checklist

Requirements Identified

For each new or changed material, part, or assembly, the Great Dane SQE/R&D engineer (or Quality designee) prepares a First Article Inspection Checklist (CORP5QA-003) or in lieu a generic level 3 requirements apply. This checklist identifies the requirements that must be completed for qualification of the material, part, or assembly for volume production.

3.4 Failure Mode & Effects Analysis

Process FMEA

The Supplier is required to perform a Process Failure Mode and Effects Analysis

3.4 Failure Mode & Effects Analysis cont...

(Process FMEA)

The Process FMEA considers all reasonably foreseeable potential failure modes of each process. Based on the potential seriousness and likelihood of the problem, the Supplier develops manufacturing controls. The Process FMEA should be a living document, and should be updated when one of the following occurs:

- Process is changed.
- Defective material is produced.

Process FMEA methods, examples and forms can be found in Potential Failure Mode and Effects Analysis published by AIAG.

3.5 Control Plan

Defined

The **Control Plan** is a detailed description of the Supplier's proposed processing steps required to produce the part, and the controls that are put into place to control the quality at each step. The Supplier must develop a Control Plan Template (CORP5QA-005), or equivalent and submit it to Great Dane for approval.

Format

Suppliers may use their own format, but the Control Plan must include all items contained in the AIAG Control Plan manual.

Components

The Control Plan must include the following information:

- All in-house processing, external processing, inspection, packaging, and shipping.
- Measuring devices and fixtures designed and built to check Great Dane parts. These devices/fixtures must be identified with a gage number and drawing.

3.5 Control Plan cont...

- All critical product and process characteristics.
- Where detailed instructions are required, the Supplier details those instructions in an Inspection Method, or equivalent, which must be listed in the Control Plan.

Inspection methods, sample sizes, and sampling frequencies should be based on the process capabilities, seriousness and likelihood of potential nonconformances, and process stability.

Critical Characteristics

Critical characteristics that do not meet Great Dane process capability requirements must be inspected 100%, unless the Great Dane SQE (or Quality designee) approves alternate control methods.

3.6 Assembly Bill of Material

When Required

Where needed and when designated by the SQE (or Quality designee), the Supplier is required to submit an Assembly Bill of Material (BOM).

Components

This BOM must include a list of all Suppliers for each part.

3.7 Pilot Fabrication

Defined

The **Pilot Fabrication** is a Supplier-produced production run of material for material qualification for either a new or substantially changed design impacting performance of the finished product. The required quantity is specified in the Purchase Order.

3.7 Pilot Fabrication cont...

Production Environment

The material must be produced under volume-production conditions, including material, machines, tooling, processing parameters, cycle times, etc.

Exceptions

Any exceptions to the volume-production conditions must be approved in writing by the Supplier Quality Engineer/R&D engineer/Lab Manager, and recorded in the data package submitted to Great Dane.

Timing

The Supplier must coordinate the timing of the Pilot Fabrication so that the SQE/R&D engineer and other Great Dane representatives may be present during the production run. Great Dane must validate and verify the process before any product is shipped. (The Pilot Fabrication must be synchronized with Great Dane volume demands.)

3.8 Sub-Supplier Certifications & Tests

Required Documentation

For material and other specified requirements for which the Supplier does not have the equipment to test, the Supplier must obtain material certifications (or test reports) from their sub-Supplier(s) or other test agency.

Components

- Specification/Drawing number
- Specified material/dimensional/physical requirements
- Inspection/test results.
- Signature of the organization that performed the testing.

A simple statement that the material meets the requirements is not acceptable.

Traceability

3.8 Sub-Supplier Certifications & Tests cont...

The reports must be traceable to the Supplier's material through lot/heat/coil/batch numbers or the like.

3.9 Material Safety Data Sheets

Materials Affected

The Supplier must furnish Material Safety Data Sheets (MSDSs) for all materials shipped to Great Dane facilities.

3.10 Supplier Gages & Standards

When Needed

The Supplier should have appropriate gages and/or standards to:

- Control the Supplier's processes.
- Inspect the product

Acceptable

Gauges or standards used to inspect material may be attribute (go/no-go) gages, color/texture standards, or variable gages designed to inspect the aesthetics and functionality of the material.

Approval

Wherever possible, the Great Dane's SQE approves gages or standards for use to control processes.

Duplicates

Duplicate gages or standards may be used at Great Dane to verify the Supplier's First Article inspections including adherence to all color and texture standards and are provided by supplier when commercially not available.

3.11 Gage Repeatability & Reproducibility Studies

Require Study

For those characteristics specified by the SQE (or Quality designee), the Supplier must:

- Perform a Gage Repeatability & Reproducibility (R&R) Study using procedures described in Measurement Systems Analysis published by AIAG.
- Analyze the study results using the ANOVA method in Minitab™ or other Great Dane-approved statistical software package.

Variable Gauges

For variable gages, normally three different operators measure ten (10) samples three times each.

Alternate Methods

The Great Dane SQE (or Quality designee) must approve alternative methods.

3.12 Gage/Standard Correlation Studies

When Required

For those characteristics specified by the SQE (or Quality designee), the Supplier must perform a correlation study.

Study Process

The correlation study is composed of the following steps:

- a. The Supplier identifies, measures, and records a specified amount of production material.
- b. The Supplier sends the sample material to Great Dane for measurement confirmation.
- c. The SQE (or Quality designee) compares Great Dane measurements with the Supplier's measurements to determine the correlation between the gages or standards.

3.13 Process Capability

Defined

Process Capability (C_{pk}) is a comparison of the inherent variability of a process output to specification limits under statistically stable conditions. Most methods for estimating capability require that the characteristic being evaluated is approximately normally distributed, and in statistical control. The distribution should be determined prior to estimating capability.

If the process is not in statistical control, all assignable causes must be identified and removed. Special techniques are available for calculating capability when inherent assignable causes, such as tool wear, are present.

Required C_{pk}

Where applicable, the following Process Capability requirements apply:

A C_{pk} of at least 1.33 is required for Critical Dimension & Features.

For $1.0 < C_{pk} < 1.33$, the process may be acceptable to start production and meets Great Dane requirements on a limited time basis.

Requires SQE/R&D engineer's (or Quality designee) written approval.

After part approval, begin production following the approved Control Plan with additional attention to the process until an ongoing $C_{pk} > 1.33$ is achieved.

Required Method

Although a number of techniques exist for assessing the capability of processes, Great Dane Suppliers must use methods defined in Statistical Process Control (SPC) published by AIAG for determining process capability and process performance. Alternate methods may only be used if approved by the Great Dane SQE (or Quality designee).

Calculation Method

When required to submit Process Capability data to Great Dane, the Supplier must calculate Process Capability using the following method, unless an

3.13 Process Capability cont...

Calculation Method

$$C_p = \text{Process Capability} = \frac{\text{USL} - \text{LSL}}{6s}$$

$$C_{pk} = \text{the minimum of either: } \frac{\text{USL} - \text{Avg.}}{3s} \text{ or } \frac{\text{Avg.} - \text{LSL}}{3s}$$

Where:

USL = Upper Specification Limit

LSL = Lower Specification Limit

Avg. = Process Average = \bar{X}

s = Estimated Standard Deviation = $s = \frac{\bar{R}}{d_2}$

\bar{R} = Average Range

d_2 = Constant from statistical table

Calculation Method

For unilateral tolerances, the same logic is employed, except that only the specified side of the tolerance is used to calculate C_{pk} .

3.14 First Article Inspection

Sample Selection

The Supplier must select representative material, parts, or assemblies from the Pilot Fabrication run for First Article Inspection. The SQE (or Quality designee) notifies the Supplier of the quantity to be inspected.

Inspection Process

The inspection process is as follows:

- a. The Supplier inspects or tests each sample for **ALL** dimensions, drawing notes, material requirements, and specification requirements listed on the current revision of the Great Dane drawing.
- b. The Supplier records the results on the First Article Report (CORP5QA-006) or equivalent.

First Article Inspection cont...

- c. The Supplier numbers a copy of the Great Dane drawing and specification to correspond with the Supplier's results.

3.15 Part Qualification

Qualification Process

The Part Qualification process is as follows:

- a. The SQE (or Quality designee) notifies the Supplier of the data required in the data package, the number of samples, and the shipping instructions.
 - b. The Supplier submits a data package and part samples to Great Dane for approval.
 - c. All documents sent to Great Dane must contain the Great Dane part number and revision.
-

MANUFACTURING CONTROL

SECTION FOUR



In This Section

- 4.1 Process Control
- 4.2 Statistical Process Control
- 4.3 Stop Capability
- 4.4 Process Performance
- 4.5 Process Improvement
- 4.6 Lot Control
- 4.7 Traceability
- 4.8 Workmanship
- 4.9 Safety
- 4.10 Maintenance

4.1 Process Control

Required Control

Great Dane Suppliers are required to control all manufacturing processes in accordance with the Control Plan, which is approved during Product Qualification.

4.2 Statistical Process Control

Required Effectiveness

Where specified in the Control Plan, the Supplier is required to apply effective statistical process controls. Effective controls must include:

- A Process Control chart that displays correctly calculated control limits. (Specification Limits may not be used as control limits.)
- A Process Control chart that is at the process area, visible to the operator, or persons who are responsible for controlling the process.
- Actions to be taken to bring the process back into control (for each out-of-control condition). These actions must be documented and maintained.
- The sorting, scrapping, reworking, or dispositioning of all product produced during any out-of-control condition must be documented (via the Supplier's material review process).

4.3 Stop Capability

Required

The Supplier must maintain an effective End of the Line stop capability to ensure Great Dane is protected from receiving any nonconforming product. The stop capability includes all features on GD drawings as well as industry relevant standards. The goal should be to stop the nonconforming material at the source gate with the actions in place to monitor and reduce occurrences. Supplier is required to store and furnish the Gate data as requested by Great Dane and relevant data as requested by SQE shipped with the lots.

4.4 Process Performance

Defined

Process Performance (P_{pk}) is the comparison of the actual process variation to the specification limits.

Performance Requirements

The following process performance requirements apply:

Requirement Category	Requirements
Critical Characteristics	<p>A P_{pk} at least 1.33 is required. Evidence of ongoing P_{pk} calculation and appropriate reaction plans must be maintained.</p> <p>Any critical characteristic failing to meet the minimum requirement requires a containment and improvement plan.</p>
Other Characteristics	<p>A P_{pk} of at least 1.00 is required. The Supplier is not required to calculate and report process performance for non-critical characteristics, unless requested by the SQE (or Quality designee). When specified by the SQE (or Quality designee), other characteristics failing to meet the minimum requirement also require a containment and improvement plan.</p>

Required Method

When required to submit process performance data to Great Dane, the Supplier must report process performance using the following method:

4.4 Process Performance cont...

Required Method

P_{pk} = minimum of either: $\frac{USL - Avg.}{3s}$ or $\frac{Avg. - LSL}{3s}$

Where:

USL = Upper Specification Limit

LSL = Lower Specification Limit

Avg. = Process Average = \bar{X}

s = Estimated Overall Standard Deviation
n = Total number of parts inspected

$$s = \sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{(n-1)}}$$

Unilateral Tolerances

For unilateral tolerances, the same logic is employed, except that only the specified side of the tolerance is used to calculate P_{pk} .

4.5 Process Improvement

Required Correction

Out-of-control or unstable processes (which have assignable causes) and processes that do not meet the minimum C_{pk}/P_{pk} requirements must be identified and corrected. *The Supplier must also improve processes with low yield rates.*

4.6 Lot Control

Defined

A **lot** consists of product of one part number and revision that are made at the same time, under the same processing conditions, from the same lot of raw materials.

4.6 Lot Control cont...

Identification

Each lot of material shipped to Great Dane must be identified with the Supplier's lot number. Inspection records must be traceable to lot numbers. The primary purpose for identifying lots is to determine the scope of actions that must be taken when problems arise during further manufacturing or with customers.

Number Changes

- The following are typical conditions that result in a change of lot numbers:
- Change of part number or revision
- Change of part number or revision of components
- Interruption of continuous production (typically for more than a few hours)
- Repairs or modification to the tooling or equipment
- Tooling changes (other than minor adjustment, or replacement of consumable tooling)
- Change to a different lot of raw materials
- Change in shift

4.7 Traceability

Required Effectiveness

Traceability ties finished product back to the components used in the product. When traceability is specified, the traceability marking should be effective down to the individual component (i.e., lot code, batch, or serial should be identifiable at a customer rework station).

4.8 Workmanship

Standards

When workmanship standards are not referenced on Great Dane drawings or specifications, the Supplier is expected to follow industry-accepted standards for wood, plastics, or metal-forming applications. When in doubt, refer to the SQE (or Quality designee) for clarification.

4.9 Safety & Environmental

Exposure

At no time should any customer or person at a Great Dane facility be exposed to hazardous material or situations that are not inherent in a component's structure.

Inherent Hazards

For items with inherent hazards, safety notices must be clearly observable. As applicable, MSDSs must be provided during the First Article process.

Standards

Residues, films, out-gassing products, and packaging materials should comply with all Occupational Safety and Health Administration (OSHA) standards. Great Dane subscribes to the current industry standards of environmental awareness and requires the same from its Suppliers. Third party certification to the ISO14001 standard is strongly encouraged.

4.10 Maintenance

Maintenance Level

The Supplier must maintain all facilities, manufacturing machines, tools,

4.10 Maintenance cont...

measuring devices, and other equipment in such a manner that the Supplier can support Great Dane production requirements, and the quality of material, parts, or assemblies manufactured for Great Dane are not degraded in any way. Preventative maintenance of equipment should be in line with manufacturers instructions and recommendations.

Great Dane Supplied Equipment & Tooling

All of the above maintenance requirements apply equally to any and all Great Dane-supplied equipment and tooling. This customer-supplied equipment and tooling must be maintained in such a manner as to maintain quality product throughout the expected life of the equipment or tooling. The Supplier also is required to notify Great Dane if any Great Dane-supplied equipment or tooling is expected to exceed its usable life within the following 12 months.

CHANGE CONTROL

SECTION FIVE



In This Section

- 5.1 External Drawing Change Control
- 5.2 Internal Process & Engineering Change Control
- 5.3 Supplier Process Change Requests
- 5.4 Supplier Request for Deviation

5.1 External Drawing Change Control

Require System

The Supplier must have a documented system for assuring that the latest Great Dane drawings (which have First Articles/PPAP approved by Great Dane) are in effect at their facility.

Required Procedures

The Supplier's Quality Manual must contain a written procedure that includes a description of the following:

- The method used for receipt, review, distribution, and implementation of all changes to drawings and specifications.
- The method used to contain new or modified parts until approved by the customer.

In addition, there must be a procedure for addressing and eliminating obsolete drawings and specifications, coupled with defining which current drawings must be in place at each location in the Supplier's process.

5.2 Internal Process & Engineering Change Control

Required System

Suppliers must have systems in place to control changes to drawings, specifications, processes, or produced product. Systems should be capable of handling changes being requested by the customer, and also changes requested by the Supplier.

*The approval process is directed at a given part number for a specified revision level produced in a specific area of the manufacturer's facility. **Suppliers may not make any changes in their process, location, material, or to the product without written approval from the Great Dane SQE (or Quality designee).** The Supplier must formally request a process change on all Great Dane materials, parts, or assemblies.*

5.3 Supplier Process Change Requests

Require Form

The Supplier must request changes to a released part, process, drawing, or specification using a Supplier Process Change Request (SPCR) (CORP5QA-007).

Great Dane encourages Supplier-initiated SPCRs with the stipulation that before an SPCR is submitted to the SQE (or Quality designee), the Supplier thoroughly reviews their FMEA and Control Plan to ensure that all process-related issues have been addressed and resolved.

Components

The originator of an SPCR provides the following information:

- Drawing or part number
- Drawing or part title
- Description of problem or recommended change
- Reason for change or “rationale”
- Proposed effective date
- Signature of originator

Approval Process

The SPCR approval process is as follows:

- a. The Supplier submits the Supplier-initiated SPCR with the revised FMEA (if applicable) and Control Plan to the responsible Great Dane SQE (or Quality designee) for evaluation of the following:
 - Supplier-demonstrated process capability and stability
 - Comparison to First Article data
 - Industry standards
 - Supplier process engineering capabilities
 - Supplier’s adherence to Supplier Control Plans
- b. After the SQE (or Quality designee) has completed the review, and concurs with the Supplier, the SQE (or Quality designee) documents the request on the appropriate Great Dane engineering Change, First Article, etc.).
- c. The request is processed through the appropriate Great Dane Purchasing

5.3 Supplier Process Change Requests cont...

...personal for approval.

- d. The SQE (or Quality designee) notifies the Supplier as to the final disposition of the SPCR and part submittal requirements and dates.

Approval Identification

Any parts sent to Great Dane that have been approved on an SPCR must be clearly identified on the box, container, or other packaging method with the appropriate SPCR number.

5.4 Supplier Request for Deviation

Required Authorization

A Supplier is never permitted to knowingly ship product that deviates from the print, specification limits, or design intent without **prior written authorization** from the Great Dane SQE/R&D engineer (or Quality designee). If such a condition exists, the Supplier may petition the Great Dane SQE (or Quality designee) responsible for the item in question to allow shipment of the product under a signed written deviation from Great Dane.

Testing

If directed by the Great Dane SQE /R&D engineer (or Quality designee), the Supplier must send samples of all nonconforming items to Great Dane for evaluation. The cost of any testing required in determining the acceptability of the product will be charged to the Supplier.

Deviation Acceptance

Representatives from the applicable Great Dane organizations will determine the item's acceptability and what actions (if any) are required beyond the deviation. The responsible Great Dane SQE (or Quality designee) will communicate this to the Supplier.

The deviation is only intended to be an interim action and is **not** to be construed as an engineering change. The Supplier must begin work

5.4 Supplier Request for Deviation cont...

immediately to correct the condition in question within the time frame stated on the deviation. Failure to comply with the mutually-agreed upon closure date for the deviation, may result in the Supplier's rating being affected.

Containment

In all cases, the Supplier must fully contain all product suspected of being nonconforming at the Supplier location. *In addition, the Supplier may be required to sort any suspect product at Great Dane or be charged back for any and all costs for this sorting.*

PACKAGING & LABELING

SECTION SIX



In This Section

- 6.1 Overview
- 6.2 Shipping Containers & Pallets
- 6.3 INTERNATIONAL Shipment
- 6.4 Labeling

6.1 Overview

Required Packaging

Each Supplier must adequately plan for packaging designed to eliminate shipping damage. Suppliers will provide expendable packaging, where appropriate, that provides for maximum density and protection from any damage that may occur. Packaging, labeling, and shipping materials must comply with the requirements of common carriers, in a manner to secure the lowest transportation costs.

Great Dane encourages Supplier-initiated packaging improvements that have been validated by industry standard shipping tests (i.e., drop, vibration, crush....)

Legality/Safety

Expendable materials and packaging must be legal and safe for standard, industry disposal and/or recycling.

Contamination

Packaging must protect the components from contamination, including fibers from the packaging materials.

6.2 Shipping Containers & Pallets

Required Pallets

All material must be palletized on four-way pallets to permit handling with lift trucks when sufficient parts are shipped. One full layer of cartons on a pallet is sufficient volume to require that parts be palletized.

X Pallet overhang is NOT allowed.

Securing Pallets

All shipping containers must be secured to pallets. Great Dane requests that pallets be strapped by at least two bands lengthwise and two bands widthwise and by stretch or shrink film where applicable. Polyester and nylon strapping

6.2 Shipping Containers & Pallets cont...

are recommended.

Container Contents

Only one part number, one color, and one Supplier lot is to be packaged in a container. Whenever possible, only one part number, one color, and one Supplier lot will be contained on a pallet.

6.3 INTERNATIONAL Shipment Requirements

Required Handling

Special requirements for international shipments exist. These requirements will be forwarded by Great Dane Purchasing when Purchase Orders are placed. In case of doubt, contact your local Great Dane Purchasing Agent.

6.4 Labeling

Required Information

Each package must contain the following information:

- Great Dane Part Number
- Great Dane Purchase Order Number
- Quantity
- Supplier's Name
- Manufacturing Facility (if Supplier has more than one facility)
- Lot identification

Bar code Requirements

Suppliers are required to adhere to Great Dane Bar code requirements. The Supplier must contact the Great Dane Purchasing Manager for the latest Great Dane Bar Code Specification when quoting new product.

CORRECTIVE ACTION

SECTION SEVEN



In This Section

- 7.1 Overview
- 7.2 Supplier Lean Alert Process
- 7.3 External Corrective Action

7.1 Overview

Great Dane requires Suppliers to use a documented closed-loop corrective action system whenever a processing problem is encountered in their manufacturing facility, or after the product has been shipped to Great Dane.

7.2 Supplier Lean Alert Process

Required Element

The Supplier Lean Alert corrective action system used should be similar to the process outlined below, with at least the main elements being used.

Element	Description
1. Use Team Approach and immediately contain any suspect product	Immediate containment of any suspect product and suspension of production, if warranted. Action plan for team formation.
2. Describe the problem	Process flow diagram to define the process. Control charts to indicate special causes. Check sheets to define “what, when, where, who, how, and how much”. Action plan to coordinate problem definition actions.
3. Implement and verify interim (containment) actions	Check sheets to evaluate effectiveness of actions. Control charts and histograms with intensive sampling for process monitoring. Action plan to coordinate interim fixes.

7.2 Supplier Lean Alert Process cont...

Element	Description
4. Define and verify root cause(s)	<p><u>Why manufacturing process produced nonconformance</u> <u>Why nonconformance was not detected</u></p> <p>Identify Potential Causes - Brainstorming for potential causes. 5 WHYS Cause-and-effect diagrams to identify and organize potential causes. Failure mode and effects analysis (FMEA) to identify potential causes of observed failure mode. <u>Analyze Potential Causes</u> Check sheet to collect data. Designed experiments, statistical analysis of data. Comparison plots, histograms, and stratified graphs to evaluate stratification factors of different process or product parameters. Scatter plots to evaluate relationships between characteristics. Gage studies to evaluate the measurement system. Action plan to manage analysis steps. <u>Validate Root Causes</u> Comparison plots, histograms, and stratified graphs to validate cause. Stratified graphs to validate presence of root cause factors. Action plan to manage validation</p>

7.2 Supplier Lean Alert Process cont...

Element	Description
4. Define and verify root cause(s)	<u>Identify Alternate Solutions</u> Alternate solution Cause-and-effect diagram.
5. Implement permanent corrective actions	Control charts and check sheets to monitor process performance. Control plan, process documentation update.
6. Verify effectiveness of permanent corrective action	Control charts and histograms to evaluate process stability and capability. Check sheets to collect product or process evaluation information.
7. Prevent recurrence	Action plan to coordinate required changes. Evaluate other areas where the problem could also occur. FMEA update.
8. Closed by a higher authority	

7.3 External Corrective Action

When Issued

The Great Dane SQE (or Quality designee) issues a Supplier Lean Alert via e-mail to the Supplier when nonconforming material, parts, or assemblies are

7.3 External Corrective Action cont...

...found at any of the following:

- Receiving Inspection
- In production
- In test
- In audit
- By a Great Dane customer.

Required Response

Within 72 hours from initial notification, the Supplier is required to respond by e-mailing the Lean Alert back to the SQE (or Quality designee) with the following:

- Initial Observation, the Containment, the Supplier “Root Cause” Investigation, and the Corrective Actions fields completed.
- Dates and the Supplier contact.

The Supplier is required to respond as defined in the table below.

Required Action	Timeline
<p>The Containment Plan must clearly define the containment actions at the Supplier’s facility, to assure that no nonconforming product is shipped to Great Dane. The Supplier must:</p> <ul style="list-style-type: none">• Address all suspect stock in transit, and any stock at any Great Dane facilities.• Specify what actions are to be taken.• Must bound the problem by identifying all suspect lot numbers and associated quantities involved.	

7.3 External Corrective Action cont...

Required Action	Timeline
<ul style="list-style-type: none"> Supplier must cover all sorting and additional transportation costs (Sort on site or return to Supplier) 	
Supplier must report the results of the Supplier's investigation into the cause of the problem.	Within 7 days from initial notification date
<p>Supplier must submit the Permanent Corrective Action to be taken to prevent recurrence of the problem, and the effective date (the date the Corrective Action will be implemented.).</p> <p><i>Train (or discipline) the operator; increase inspection, and the like are not acceptable corrective actions.</i></p>	Within 15 days from the initial notification date.
Supplier must keep Great Dane informed of progress towards implementing the Corrective Action.	Ongoing
Supplier and Great Dane SQE (or Quality designee) verify that the Corrective Action is effective in correcting the problem. The Great Dane SQE (or Quality designee) then closes out the Supplier Lean Alert.	When the Corrective Action implementation is complete

SHIP-TO-USE

SECTION EIGHT



In This Section

- 8.1 Overview
- 8.2 Ship-to-Use Requirements
- 8.3 Ship-to-Use Suspension

8.1 Overview

Program Purpose

Great Dane has instituted a Ship-to-Use program to reduce the problems associated with receiving nonconforming product from Suppliers, while minimizing Receiving Inspection and speeding up the process of moving product to production.

When Used

Great Dane administers the Ship-to-Use program on a product-by-product basis.

Applicability

Ship-to-Use applies to all material and components purchased for use in full-volume, released product at all Great Dane locations.

Ship-to-Use does not include pre-released parts, samples, prototypes, pilot fabrication runs, First Articles for new tooling or processes, and other low-

8.2 Ship-to-Use Requirements

Product Requirements

To be considered for Ship-to-Use the product must meet the following requirements:

- The Supplier must be a Great Dane Approved Supplier, if the material, part or assembly is designated as having a significant impact to form, fit, function or appearance by a Great Dane SQE (or Quality designee).
- The most recent five consecutive lots received must have passed Receiving Inspection.
- The part must have no significant outstanding Lean Alerts as determined by the SQE (or Quality designee).

Compliance Audits

Great Dane may audit the Supplier for compliance to the Supplier's Control

8.2 Ship-to-Use Requirements cont...

Plan and may audit the Supplier's Quality System. Any open issues must be resolved, including drawing/specification dimensioning and tolerances, process capability, and open Lean Alerts requiring Supplier action.

Handling

When received by Great Dane, Ship-to-Use material is moved directly into production, bypassing Receiving Inspection.

8.3 Ship-to-Use Suspension

When Suspended

The Supplier's Ship-to-Use status is put on suspension when any of the following conditions occur:

- The part fails Receiving Inspection or is deemed nonconforming during manufacture for a lot or an ad hoc lot sampling.
- A Supplier-caused Lean Alert is initiated for the part.
- The Supplier fails a Quality System Audit.
- An audit shows the Supplier is not following their approved Control Plan.

Process

The suspension process is as follows:

- a. Great Dane notifies the Supplier that a Supplier's Ship-to-Use status is put on suspension.
- b. Great Dane issues a Lean Alert (if a Lean Alert has not already been issued) to the Supplier and works with the Supplier to correct the problem.
- c. Suspension continues until Great Dane is satisfied that the "root cause" of the problem has been identified and corrected, the corrective action has

8.3 Ship-to-Use Suspension cont...

been implemented and is effective, and the Lean Alert requiring Supplier action is closed.

- d. Implementation may be verified at the Supplier's facility, or by documentation sent by the Supplier, and normally includes confirmation by Receiving Inspection of acceptable lots.

Return to Good Standing

When the Supplier's Ship-to-Use status is returned to good standing, Great Dane notifies the Supplier that the Supplier has been returned to Ship-to-Use status.

Discontinuation of Ship-to-Use Status

If a Supplier does not implement effective corrective action, or if the Supplier is put on suspension repeatedly, Great Dane determines whether the Supplier's Ship-to-Use status should be discontinued. Any expenses related to added inspections at Great Dane will be passed on to the supplier as a charge back. *This decision may also include a determination to divert the business to an alternate Supplier.*

SUPPLIER MONITORING

SECTION NINE



In This Section

- 9.1 Overview
- 9.2 Supplier Audits
- 9.3 Quality System Audit
- 9.4 Control Plan Audit
- 9.5 Source Inspection at the Suppliers Facility
- 9.6 Supplier-Furnished Lot Documentation

9.1 Overview

Purpose

Great Dane continually monitors its Suppliers to ensure they continue to meet Great Dane requirements, and to ensure that the Supplier continues to ship acceptable material, parts, or assemblies. This monitoring may consist of:

- A Quality System surveillance audit at the Supplier's facility.
- An audit of the Supplier's Control Plan.
- A normal Material Quality Verification of a lot.
- Source Inspection of product at the Supplier's facility.
- Review of Supplier-furnished Data Packages.

9.2 Supplier Audits

Availability

The Supplier must make their facility available for on-site process verification by the Great Dane SQE (or Quality designee) at any time, with a minimum of 15 days notice.

Personnel Involved

The SQE (or Quality designee) conducting the verification may be supported by the representatives from other Great Dane organizations (i.e., Quality, Purchasing, Engineering, and Manufacturing).

9.3 Quality System Audit

Purpose

Periodically, Great Dane may audit the Supplier's Quality System and manufacturing processes. This may be a full or abbreviated documentation and

9.3 Quality System Audit cont...

...on-site audit. The purpose of this audit is to evaluate any changes that may have occurred in the Supplier's quality system, and to assess the Supplier's continuing commitment to quality improvement.

9.4 Control Plan Audit

Purpose

Periodically, Great Dane may audit the Supplier's continuing conformance to the Supplier's Control Plan.

9.5 QA & Production Inventory Control

Purpose

Great Dane expects its Suppliers to furnish material that conforms to all requirements, and that does not need to be inspected when Great Dane receives it. The Quality Technician or Quality designee (which may include PIC) inspects material that has not achieved Ship-to-Use status, or that is on Ship-to-Use suspension on a lot-by-lot basis.

Sampling Plan

Great Dane uses a C=0 Sampling Plan (ANSI Z1.4) that rejects the lot when a single nonconforming part is found in the sample.

9.6 Source Inspection at the Suppliers Facility

Purpose

Great Dane may inspect product at the Supplier's facility, to detect potential problems prior to shipment to Great Dane. Great Dane may also inspect product at the Supplier's sub-Suppliers.

9.7 Supplier-Furnished Lot Documentation

Required Data

Great Dane may require the Supplier to furnish inspection, test, process performance, or other quality data with each shipment to ensure that the product meets Great Dane requirements.

Timing

When data submission is required, the data must be e-mailed to the Great Dane plant QA Manager/corporate QA at the same time the lot is shipped.

Identification

All documentation must be clearly identified with the Great Dane part number, and the Supplier's lot number.

Data Packages

When specified by the SQE (or Quality designee), the Supplier must submit via email monthly data packages to the SQE and/or designee. Data packages typically consist of copies of control charts and Cpk & Ppk calculations for specified characteristics. Other data may be requested by the SQE (or Quality designee).

Elimination of Data Submissions

Once the Supplier has completed two consecutive quarters of data submissions, the Supplier may request elimination of the data submission, if the records show that characteristic consistently satisfies Great Dane requirements for process stability and process performance, and if the characteristic has caused no problems in Great Dane production. The Great Dane SQE (or Quality designee) determines whether data submission must be continued.

ANTI-BRIBERY & CORRUPTION

SECTION TEN



In This Section

- 10.1 Overview
- 10.2 Bribes, Kickbacks, and Charitable Donations
- 10.3 Compliance with the Policy

10.1 Overview

Program Purpose

Great Dane is committed to the prevention, deterrence and detection of fraud, bribery and all other corrupt business practices. It is Great Dane's policy to conduct all of its business activities with honesty, integrity and the highest possible ethical standards and vigorously enforce its business practice, wherever it operates throughout the world, of not engaging in bribery or corruption.

When Used

This Anti-bribery and Anti-Corruption Policy (this "Policy") applies to all individuals worldwide working for all affiliates and subsidiaries of Great Dane at all levels and grades, including directors, senior executives, officers, employees (whether permanent, fixed-term or temporary), consultants, contractors, trainees, casual workers, volunteers, interns, agents, or any other person associated with Great Dane (collectively referred to as "You" or "you" in this Policy). In this Policy, "Third Party(ies)" means any individual or organization, who / which come into contact with Great Dane or transacts with Great Dane or you and also includes actual and potential clients, suppliers, vendors, business contacts, consultants, intermediaries, representatives, subcontractors, industry associations, investors, research analysts, agents, advisers, joint ventures and government & public bodies (including their advisers, representatives and officials, politicians and political parties).

Applicability

Great Dane will uphold all laws relevant to countering bribery and corruption in all the jurisdictions in which we operate. We remain bound by all the applicable local and national laws including the Foreign and Corrupt Practices Act 1977. In case any of the provision(s) of this policy is found to be conflicting with any other applicable laws and/or statutory provisions which might govern and/or impact the said provisions of this policy, as the case may be, such applicable laws and/or statutory provisions would have overriding effect to the effect of

10.2 Bribes, Kickbacks, & Charitable Donations

Policy Definition

A bribe is an inducement, payment, reward or advantage offered, promised or provided to any person in order to gain any commercial, contractual, regulatory or personal advantage. A bribe may be anything of value and not just money -- gifts, inside information, sexual or other favors, abuse of function, which can pass directly or through a Third party. Corruption includes wrongdoing on the part of an authority or those in power through means that are illegitimate, immoral or incompatible with ethical standards. Corruption often results from patronage and is associated with bribery.

Gifts and Hospitality

Employees or members of their immediate families should not provide or promise to provide, solicit or accept or agree to accept at a future date cash or its equivalent, favors, or anything of more than a normal and appropriate value to or from competitors, vendors, suppliers, customers or any other Third party that do business or are trying to do business with Great Dane.

Kickbacks

“Kickbacks” are bribes to obtain an undue advantage, where a portion of the undue advantage is 'kicked backed' to the person who gave, or is supposed to give, the undue advantage.

Charitable Donations

As part of its corporate citizenship and/or Corporate Social Responsibility activities, Great Dane supports local charities, sporting, or cultural events. We only make charitable donations that are legal and ethical under local laws and practices and also within the corporate governance framework of the organization.

10.3 Compliance with the Policy

Great Dane employees are expected to read, understand and comply with this Policy. The prevention, detection and reporting of bribery and other forms of

10.3 Compliance with the Policy cont...

... corruption are the responsibility of all those working for Great Dane or under Great Dane's control or connected to Great Dane. You are required to avoid any activity that might lead to or suggest a breach of this Policy. Employees must notify his / her Manager as soon as possible if you believe or suspect that a breach of or conflict with this Policy has occurred or may occur in the future by way of a bribery issue or any other malpractices. Any employee who breaches this Policy will face disciplinary action, which could result in dismissal.

Any breach of this Policy would result in Great Dane notifying appropriate authorities and termination of contract with a Third Party. The Board of the Company or any committee / person authorized by the Board for this purpose shall determine appropriate action in response to violations of this policy. Anyone who breaches this policy shall indemnify Great Dane against all claims, actions, damages, losses, liabilities and costs, including reasonable legal fees, that may be incurred /suffered by Great Dane on account of any non-compliance of such person with this policy. In case of dismissal of an employee or termination of the contractual relationship with any third parties for the breach of the policy, no money will accrue for payment by the Company in any manner whatsoever from the date of such dismissal/termination except the amount which is already accrued till then.

The President has overall responsibility for ensuring that this Policy complies with our legal and ethical obligations and that all those under our control comply with it. Managers at all levels are responsible for ensuring that those reporting to them are made aware of and understand this Policy, undertake training on how to implement and adhere to it and also monitor compliance of it.

SUPPLIER SCORECARD

SECTION ELEVEN



In This Section

- 11.1 Overview
- 11.2 Score Card Components

11.1 Overview

Program Purpose

As part of our efforts to more effectively rate supplier performance, Great Dane has introduced a Supplier Scorecard Process. Scorecards are used to support our commodity management, subcontract management and strategic sourcing objectives. More importantly, we believe the Scorecards facilitate stronger communications between Great Dane and our supplier team members. Selected suppliers who provide products that are ultimately delivered to our customers will receive a Scorecard. Generally, special processors, service suppliers, and tooling suppliers will not receive a Scorecard.

When Used

Supplier Scorecards will be sent on a quarterly cadence by the commodity management team.

Applicability

Only select suppliers will be receiving the scorecards

11.2 Score Card Components

Calculation Elements

Quality - Defective Parts Per Million. # of defective parts shipped to Great Dane plants labeled "Parts Defective" for each quarter of the year and divided by the total amount of parts shipped as "Parts Received". Total Amount of Rejected Parts and Parts Received are obtained by going to Oracle BI Publisher report and running the Usage Report.

Delivery - Vendor's On Time Delivery by Quarter under the columns marked OTD by quarter. Vendor fill rate % in the fill rate columns per quarter.

Customer Service - On a scale of 0-5, Vendors are measured in the following categories - Response Time, Customer Effort, Short Lead Time Accommodations, Accuracy of Work, Overall Commercial Relationship.

Cost - On a scale of 0-5, vendors are rated in the following categories -

11.2 Score Card Components cont...

... Cost Savings Initiatives, Supplier Negotiations, Rebate Accuracy, Future Cost Containment, Payment Terms, Payment Discount Terms.

Calculation Weightage

Quality - 25%

Delivery - 25%, (OTD - 75% and Fill rate 25% of the metric)

Customer Service - 25%

Cost - 25%

Frequency

Score cards are emailed every quarter by commodity managers.

Expectations

Great Dane expects suppliers to continue to monitor their scorecards and improve the metrics quarter over quarter. Suppliers falling short of Great Dane continuous metric improvement are asked to provide corrective actions for all metrics falling short.

The background of the page is a dark, starry night sky. At the bottom, there is a silhouette of a mountain range with snow-capped peaks. The text is centered in the upper half of the page.

ACRONYMS & ABBREVIATIONS

The following terms, acronyms, abbreviations, symbols, and trademarks are used within this document.

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Word	Definition
Control Plan	A detailed description of the Supplier's proposed processing steps required to produce the part, and the controls that are put into place to control the quality at each step.
Lot	Product of one part number and revision that are made at the same time, under the same processing conditions, from the same lot of raw materials.
Pilot Fabrication	A Supplier-produced production run of material used for material qualification.
Process Capability	A comparison of the inherent variability of a process output to specification limits <u>under statistically stable conditions</u> .
Process Performance	The comparison of the actual process variation to the specification limits.

Acronyms & Abbreviations

AIAG	Automotive Industry Action Group
ANOVA	Analysis of Variance
BOM	Bill of Material
Cpk	Process Capability
FMEA	Failure Modes and Effects Analysis

Table of Contents

Acronyms & Abbreviations	
ISL	International Organization for Standardization
LSL	Lower specification limit
MSDS	Material Safety Data Sheets
OSHA	Occupational Safety and Health Administrations
PFMEA	Process Failure Mode and Effects Analysis
PIC	Production Inventory Control
PPAP	Production Part Approval Process
Ppk	Process Performance
QA	Quality Assurance
R&R	Repeatability & Reproducibility
R&D	Research & Development
SLA	Supplier Lean Alert
SPC	Statistical process control

Acronyms & Abbreviations

SQE	Supplier Quality Engineer
SPCR	Supplier Process Change Request
USL	Upper specification limit
TM	Trademark ownership claimed
Cpk	Process Capability

Trademarks

Trademarks	Many of the designations used by manufacturers and sellers to distinguish their products are claimed as trademarks. Where those designations appear in this document, and Great Dane was aware of a trademark claim, the designations have been printed in caps or initial caps.
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