

# SUPPLIER QUALITY MANUAL



## *Table of Contents*

<b>Section 1.0 Purpose</b>	<b>1</b>
<b>Section 2.0 Scope</b>	<b>1</b>
<b>Section 3.0 Quality Philosophy</b>	<b>1</b>
<b>Section 4.0 Supplier Selection and Rating</b>	<b>1</b>
<b>Section 5.0 Sundyne Inspection of Purchased Goods</b>	<b>1</b>
<b>Section 6.0 Proper Relationships with Suppliers</b>	<b>1</b>
<b>Section 7.0 Communications</b>	<b>2</b>
<b>Section 8.0 General</b>	<b>2</b>
8.1 Q+ Certification Process	<b>2</b>
8.2 Sundyne Part Approval Process	<b>3</b>
<b>Section 9.0 Specific Requirements</b>	<b>3</b>
9.1 Process Capability Requirements and Process Measurement	<b>3</b>
9.2 Supplier Corrective Action Requests (CAR)	<b>4</b>
9.3 Supplier Product Deviation Request	<b>4</b>
9.4 Reliability and Maintainability Test Results	<b>4</b>
9.5 Subcontracting Requirements	<b>5</b>
9.6 Measurement and Inspection Analysis	<b>5</b>
<b>Section 10.0 Configuration Control</b>	<b>5</b>
10.1 Process Control	<b>5</b>
<b>Section 11.0 Warranty Requirements</b>	<b>5</b>
<b>Section 12.0 Continuous Improvement</b>	<b>5</b>
<b>Section 13.0 Certifications</b>	<b>5</b>
<b>Section 14.0 Special Testing</b>	<b>5</b>
<b>Section 15.0 Non-Destructive Test</b>	<b>5</b>
<b>Section 16.0 Packaging, Marking, and Protection</b>	<b>5</b>
16.1 Part Marking	<b>6</b>
16.2 Part Segregation	<b>6</b>
16.3 Corrosion Protection	<b>6</b>
<b>APPENDIX</b>	
A1: Sundyne Part Approval Process	<b>7</b>
A2: Part Qualification Check Sheet w/ Instructions	<b>8</b>
A3: Initial Sample Submission Form w/ Instructions	<b>10</b>
A4: Lot Inspection Plan and Record w/ Instructions	<b>12</b>
A5: Supplier Deviation Request Form w/ Instructions	<b>14</b>
A6: Q+ Survey Form w/ Instructions	<b>16</b>
A7: Supplier Corrective Action Request (CAR) Form w/ Instructions	<b>22</b>
A8: Process Control Plan w/ Instructions	<b>24</b>

supplied to Sundyne (see section "8.1 Q+ Certification Process" for more detail).

## Section 1.0 Purpose

This specification establishes the general requirements for suppliers of Sundyne Corporation for the procurement and supply of production components. Sundyne Corporation relies on the integrity of the supplier's quality systems, but recognizes good quality is only achieved through good process controls and effective monitoring of process output. As such, ISO or any other certification is a good start, but only considered as one of the basic requirements as the supplier's capabilities are considered.

## Section 2.0 Scope

This Supplier Quality Manual applies to all suppliers who provide goods and services to Sundyne Corporation. Suppliers with programs established with one industry (e.g. QS 9000) may substitute their own forms and formats and may deviate from this supply manual upon written agreement by Sundyne Corporation.

## Section 3.0 Quality Philosophy

Sundyne Corporation, a subsidiary of Hamilton-Sundstrand Corporation, is a leading high technology corporation having a reputation for excellence in the pump and compressor industries. A critical component of our leadership is the world-class quality of the products and services that we provide to our customers. As a supplier, you play an integral role in helping us set the benchmark for world-class quality year after year.

The development and manufacture of any product in today's market requires an **effective documented quality system** which identifies, coordinates, and controls all key activities necessary to produce a quality product. The system should be based on the philosophy of collaboration and continuous improvement, **emphasizing defect prevention and the reduction of variation and waste in the supply chain.**

In order to meet our customers' rising expectations in terms of cost, quality, and delivery, it is imperative that the machines and processes used in the manufacture of our products have the ability to satisfy the required tolerances and specifications when properly maintained and controlled. Machines and processes that can be controlled through the use of **statistical methods** and **mistake proofing methods** are crucial to achieving our goals for low cost, highest quality and best on-time delivery. Note that it is never acceptable to knowingly pass a defect to the next stage of the production process. A defect is anything that does not meet specifications.

Therefore, **continuous improvement** in both products and processes by suppliers to Sundyne is critical for us to maintain the world-leadership position in our marketplaces. Achieving conformance to requirements by inspection, sorting, scrap, and rework is neither cost effective nor does it result in optimum quality levels. We expect our suppliers to continuously strive for improvements in the products and services that they supply to Sundyne. This permits us to reduce progressively, the controls and checking of the products of our suppliers.

In order to assess our suppliers' ability to meet these requirements the Q+ Certification process will be utilized. The overall goal of the certification process is to improve the overall quality, reliability, and total cost of products and services

## Section 4.0 Supplier Selection and Rating

Sundyne's supplier quality system follows the basic format of the United Technologies Q+ Certification system for the evaluation and rating of suppliers. (See *appendix A6*). It is designed to identify strengths and weaknesses in a supplier's quality program and target areas for improvement. By understanding its quality system and implementing improvement plans, the supplier can improve the overall quality, reliability, and total cost of components in the products and services supplied to UTC as well as to other important customers. The Q+ Certification System will be invoked for both new/potential suppliers and also may be invoked for current suppliers to Sundyne companies as well. In general the following rating system is used for rating suppliers:

**L1-Non Compliance:** No procedures; no historical documentation; no measures; fragmented instructions; no correction action activity, or partially documented/implemented system.

**L2-Compliance (Maturing):** Documented procedures; defined instructions; published results; shared throughout the organization; corrective action evident; documented training. This is the minimum rating necessary to be a supplier to Sundyne companies.

**L3-Q Plus Compliance (Qualified):** Measurable results that are based on statistics, with a plan for continuous improvement in business processes.

**L4-Quality Enhanced System (Preferred):** System maintenance evident; internal audits conducted; objective evidence of continuous improvement and all employee involvement.

As a supplier to Sundyne companies, your quality system will be audited/surveyed following the guidelines defined above.

While we will conduct business with L1 and L2 suppliers, any Sundyne supplier at this level will be expected to improve their product quality and business processes in order to achieve L3 and above status, as this level minimizes the level of inspection at Sundyne companies.

## Section 5.0 Sundyne Inspection of Purchased Goods

To reduce risk to our internal processes and ultimately our customers, Sundyne will identify requirements for inspection and will inspect those purchased goods upon receipt.

The following factors will dictate the inspection sampling rates at Sundyne:

- Part Criticality (quality impact to customer product)
- Past Supplier Quality Performance (including Q+ results)
- Custom nature of Sundyne requirements

## Section 6.0 Proper Relationships with Suppliers

It is the policy of Sundyne to award contracts for all goods and services on the basis of merit. Suppliers will be treated with

fairness and integrity and without discrimination. To do so, all employees in any organization having contact with suppliers or potential suppliers must maintain the highest standards of ethics and business practices. The UTC Statement of Policy Governing Conflicts of Interest guides employees who deal with suppliers or potential suppliers.

We understand that giving business gifts is commonplace and can represent merely a desire to build goodwill. Sundyne, however, has very restrictive policies governing receipt of business gifts by employees who have direct purchasing responsibilities. Purchasing decisions must not be influenced by a conflict of interest and must not be tainted even by the appearance of a conflict of interest.

Employees who have direct purchasing responsibilities, including employees in the purchasing department, supplier quality function, and any other individual having a role in supplier selection and appraisal, may accept only (a) beverages, light snacks and business meals served during business meetings held at the facilities of suppliers; (b) business meals when in travel status; (c) promotional or advertising items having a truly nominal value; and (d) any other business gift or thing of value if reported to and approved in writing by the Business Practices/Compliance Officer of Sundyne.

We ask that our suppliers be cognizant of this policy, and refrain from placing Sundyne employees in situations that may lead to violation of this policy.

## **Section 7.0 Communications**

While the processes in this manual attempt to reduce the number of individuals a supplier must work with, the need for speedy and efficient resolution of issues may require some direct communications. In general the following contact points should be used.

**Primary Contact:** The Supplier's Contract Manager/Buyer is the primary contact for all matters regarding Sundyne purchasing. For quality related matters, the Sundyne buyer will put you in contact with Sundyne Supplier Quality personnel.

Conversely, the Supplier should provide the names and contact information of the Quality and/or Warranty focal points at their location as well.

The specific requirements for a particular part will be communicated to the supplier via the Part Qualification Check Sheet.

1. Country of Origin – When required, this information is to be marked using the same marking method as that used to mark the part number

2. Traceability – Suppliers are required to be able to provide material certifications on production components if required for any order current or completed. Traceability is required for all forms of raw material including bar, forgings, and castings. Records retention procedures at the supplier's facility should enable Sundyne to trace from the heat/pour/melt number as provided on the part in Section 1 above to the certifications on the raw material use in the production of Sundyne parts. This traceability is limited to 5 years from completion of the order.

3. Hierarchy of Technical Information – As part of the purchase order process, suppliers will be provided with numerous forms

of information. Suppliers are to utilize the following hierarchy of information as they process our purchase orders.

- a. **Drawing.** This is the primary document defining the technical requirements in cases where a drawing is provided with the order. For those drawings that do not specify the materials of construction, materials are called out in the purchase order text.
- b. **Purchase Order.** The text information provided with our purchase orders is also used to control the configuration of our parts. On parts with accompanying drawings, purchase order text is used to supplement drawing information. For instance, material specifications and any supplemental requirements will be defined in the purchase order text.

For parts that do not require drawings, purchase order text is the governing document and will provide sufficient information for the supplier to respond to our purchase order. For instance, the text might call out the manufacturer's part number, or specific dimensions and material requirements for industry standard parts.

- c. **Sundyne Specifications.** In rare cases, Sundyne Companies will provide a proprietary specification defining specific product configuration details.

This Sundyne Specification document will be referenced on the drawing or in the purchase order text.

- d. **Industry specifications.** Industry standard specifications are used whenever possible. Suppliers will find reference to ASTM, DIN, JIS, BS and other international standards organizations. It is the responsibility of the supplier to ensure that they are using the most current standard. Sundyne will not provide the supplier with copies of industry standards.

4. **Proprietary Information -** Suppliers are reminded that any information provided in the course of doing business with Sundyne Companies is considered proprietary. Consequently suppliers have an obligation to protect such information from inadvertent disclosure. Appropriate cautions must be employed in the event any sub-contract operations are performed outside of the supplier's control.

## **Section 8.0 General**

### **8.1 Q+ Certification Process**

**Purpose:** The UTC Q+ Survey (see appendix A6) is intended to assist the supplier in reaching world-class quality goals. Both the Audit and Supplier Survey criteria are intended to assess a supplier's quality system and process control capability, and are not absolute descriptions of what is required to assure quality in products and services.

The Audit and Supplier Survey help the supplier identify strengths and weaknesses and areas for improvement. The supplier develops an improvement plan based on the results of the Self-Assessment and Survey, thus improving the overall

quality, reliability, and total cost of components supplied to Sundyne. By assessing its quality system and developing improvement plans, the supplier can vastly improve its quality to Sundyne as well as to other important customers.

**Q+ Supplier Survey:** The Self-Assessment is completed by the supplier independently and evaluated by Sundyne. These criteria generally follow the ISO 9001 criteria and add specific requirements to ensure effective process controls and quality results.

**Q+ Audit:** The Audit consists of various criteria regarding the quality system. Either a Sundyne audit team performs an on-site evaluation of the supplier, and from available evidence and observations, assesses the supplier's compliance at one of four levels for each of the items; or the supplier performs a self-audit and supplies evidence to support conformance. The survey is intended to provide a fair appraisal of the supplier's quality system, process controls, and commitment to quality at the time of the survey.

**Q+ Certification:** Suppliers that become certified by Sundyne are viewed as Q+ Certified suppliers. Certified suppliers will be given first preference for new designs and resourcing activities, and may get reduced requirements in regards to the Sundyne Part Approval Process (see Sec 8.2). "Preference" in this context does not mean guaranteed business opportunities.

- To become a candidate for Q+ Certification, a supplier must achieve Level-3 compliance or better from the Q+ Audit.

## 8.2 Sundyne Part Approval Process

The Sundyne Part Approval Process (SPAP) will be used to determine if the supplier properly understands all Sundyne requirements and the supplier's process has the capability to produce product meeting these requirements during actual production runs. The SPAP must be produced using the actual process under consideration. The SPAP qualifies production for specific tooling, equipment, line, factory, and sub-tier production processes. The submission must reflect this. (See Appendix A1: SPAP flow chart.)

In cases where there is substantial risk in terms of project lead times or cost, Sundyne may elect for a Source Inspection to validate SPAP requirements.

The Sundyne buying agent will be responsible for informing you of when this SPAP and/or Source Inspection is required.

### When to submit:

- Suppliers must submit documentation called for on the Part Qualification Check Sheet (PQCS) or inspection plan to Sundyne regarding its part production and control plan before the first production run.
- The supplier is responsible for alerting Sundyne whenever production circumstances change and one of the following situations become applicable:
  - A significant change in manufacturing process including tooling or method
  - A change in Sub-tier supplier
  - A change in Operations location
  - A change in Raw Material

- A 2-year lapse in supply of an existing part
- A change in Senior Management

### What to submit.

Note: Suppliers with programs established with one industry (e.g. QS 9000) may substitute their own forms and formats and may deviate from this supply manual upon written agreement by Sundyne Corporation.

- **Initial Sample:** The specific sample size will vary based on factors such as component size, complexity, cost of manufacture, and projected volume, and will be communicated to the supplier by Sundyne. Where multiple production molds, cavities, dies or machines are to be utilized, samples will be required from each separate production process to be used during follow-on production. Samples must be taken or made from actual production tooling and/or processes unless otherwise approved in writing.
- **Sample Submission-Dimensional Analysis:** Dimensional results of the submitted samples, referenced to the part drawing requirements must be provided. Variable or attribute data type in terms of measurements will be specified on the Inspection Plan.
- **Material, performance, and durability test results as specified:** The supplier, or a qualified independent third party, must supply specific material, performance and/or durability test results. Actual results must be compared with agreed upon specifications. For certain critical parts, Sundyne may require testing by third parties. Products that do not meet requirements will be rejected. Suppliers should discuss results with Sundyne.
- **Control Plans:** Control plans for families of similar parts may be acceptable if Sundyne has reviewed the new parts for commonality.
- **Other documentation as Specified:** Sundyne may impose other requirements as necessary, such as process capability studies, gauge repeatability and reproducibility (GR&R) studies, PFMEA, or DFMEA where the Supplier has design responsibility.

## Section 9.0 Specific Requirements

The Part Qualification Check Sheet or inspection plan will call out specific requirements. The PQCS will be prepared by Sundyne and provided to the supplier early on in the procurement process. Suppliers should review the check sheet and insure that all specific requirements are understood, and then sign and return the check sheet to Sundyne. This check sheet will specify which sections of the manual apply to a specific part. This manual contains a sample PQCS (See section "8.2 Sundyne Part Approval Process" and "9.0 Specific Requirements" for more detail).

### 9.1 Process Capability Requirements & Process Measurement

In order to prove stability of a process, the output of an individual process, or group of processes should be measured and tracked. These metrics could be process capability studies (Cp, Cpk) or other measurements such as yield.

Sundyne will define the characteristics for which the supplier needs to provide capability data. Sundyne may also designate critical product or process characteristics beyond those formally identified on engineering drawings and specifications. These additional requirements may be based on known process issues, production problems, or field problems.

For critical characteristics, Sundyne requires a minimum of 1.33 Cpk, unless otherwise specified.

All other characteristics (non-critical) must meet a minimum of 1.0 Cp, unless otherwise specified.

The initial capability analysis shall be provided to Sundyne at delivery of the first production run, and will be evaluated at the time of Production Part Approval. Production processes that cannot meet the above criteria require a corrective action plan.

For characteristics deemed critical by Sundyne, Suppliers shall implement 100% inspection to screen out non-conforming products at all processes that do not meet the 1.33 Cpk threshold for critical characteristics. Process improvement actions should be taken immediately, documented and 100% inspection shall be continued until the above levels of long-term capability are demonstrated.

### 9.2 Supplier Corrective Action Requests (CAR)

In the event that supplier defects are discovered at Sundyne, the parts/components in question will be identified and segregated to preclude further use. Sundyne will make a determination of the next steps to be made in the process based on several criteria, including the defect's criticality, quantity, cost, and other factors. Based on this evaluation, Sundyne will determine whether the:

- Defectives are accumulated and returned to the supplier
- Supplier sorts the defectives at Sundyne

Sundyne will request a supplier to submit a formal written corrective action to address specific non-conformances identified at either a plant or in the field and will be categorized as either Minor or Major Escapes. Generally, Minor Escapes are defined as non-conformances from a supplier that have a negative operations and financial impact to internal Sundyne processes. Major Escapes are defined as non-conformances from a supplier that have a negative operations and financial impact to a Sundyne end-user or customer.

The need for a formal corrective action request will be evaluated in terms of potential impact upon production costs, quality costs, performance, reliability, safety, and customer satisfaction. Suppliers are expected to fully comply with these requests.

Corrective Action Requests (CAR's) will be issued to the supplier. The supplier's response must include root cause determination, containment action (short-term corrective action which includes an analysis of stock purge if necessary), and permanent (long-term) corrective action.

The following establishes the expected response time of these requests:

- **Minor Escape:** 10 business days for CAR's
- **Major Escape:** 30 business days for a CAR

requesting a structured problem-solving process (ie- common industry-standard methods include: DMAIC, DMADV, DIVE, 8D, etc.)

A member of Sundyne Supply Chain may work with you at your site when Corrective Action Requests are warranted. It is the expectation of Sundyne that our suppliers support these efforts, and that they provide the proper personnel to perform such actions.

In some cases, complex issues may dictate a longer period for response. It is the supplier's responsibility to communicate that to Sundyne, and to work with Sundyne to establish an acceptable time frame for response.

### 9.3 Supplier Product Deviation Request

In certain instances, it may be necessary for the supplier to deviate from Sundyne requirements and specifications. Request for such deviations shall be made using the Sundyne Supplier Deviation Request (SDR) form (see Appendix A5: SDR form).

A deviation request may arise from the following situations:

- A supplier may initiate the deviation request because of non-conforming material found at their facility.
- A supplier may initiate the deviation to request a substitution of material, processing method, or change in procedures.
- Sundyne may initiate the request to document a change to specifications prior to a formal product change authorization being completed.
- Any other major business or process change that the supplier feels would warrant such a request.

The Supplier Deviation Request form must provide all required and pertinent information about the requested deviation. The supplier is responsible for the segregation and non-shipment of the non-conforming material until a deviation is granted. Discrepant material received at Sundyne without an approved SDR will be rejected and returned to the supplier at the supplier's expense with all additional handling and shipping costs incurred by the supplier.

No discrepant material will be processed until all required personnel approve a deviation. Once approved by Sundyne, all material shipped to Sundyne must be accompanied by a copy of the approved SDR. Sundyne views the excessive use of SDR's for non-conforming material as abusive and an indicator that a supplier may have a serious breakdown in their quality system. Suppliers are discouraged from using the SDR as a mechanism to ship non-conforming material. The SDR shall not be used to cover up or replace proper quality systems and process controls at the supplier location.

SDR's will be processed at Sundyne when such concerns arise to assist in rectifying the specific issue at hand, both on the Sundyne and supplier side.

### 9.4 Reliability and Maintainability Test Results

Suppliers will be required to provide reliability and/or maintainability test results to Sundyne as requested on the Part Qualification Check Sheet or other appropriate document. In these cases the test plans will be submitted to Sundyne for

approval. Suppliers shall submit all results, with test parts if requested, at the completion of the test.

### 9.5 Subcontracting Requirements

Subcontracting is generally permitted for machining and inspection operations. However, the use of subcontracting for special processes such as heat treat, plating, and other critical processes will require our prime supplier to disclose that contractor's responsibilities and capabilities to the appropriate Sundyne buying organization. Sundyne reserves the right to review, approve and audit any subcontractors providing processes and services critical to the function of our equipment. When a supplier subcontracts, it is the supplier's responsibility to obtain any certifications required by Sundyne.

### 9.6 Measurement and Inspection Analysis

Sundyne expects suppliers to maintain controls on their measurement devices that, at a minimum fulfill ISO9001, AS9100, TS/QS 16949, or ASQ-Q9001 standards.

Supplier inspection data may be required for dock to stock items or items going to Sundyne's Receiving Inspection.

## **Section 10.0 Configuration Control**

Sundyne will provide the supplier with changes to drawings or specifications. The supplier will ensure that changes are processed throughout the production process and supporting documents such as Work Instructions, Control Plans and inspection plans are updated.

For changes initiated by the Supplier or designs controlled by the Supplier, the supplier will ensure that the correct revision level of the part is provided to Sundyne.

It is the supplier's responsibility to communicate with Sundyne on any discrepancies or misunderstandings. For errors or mistakes found on Sundyne documents, the supplier shall use the Supplier Deviation Request Form.

### Section 10.1 Process Control

Suppliers shall control their production processes to ensure that they are stable and in control.

- First piece inspections to qualify machines/processes for production use
- In process inspections to monitor production runs
- Final inspection to verify requirements are met
- Measuring equipment is calibrated and there is a documented calibration system
- Preventive maintenance program for machinery
- Precautions are made to prevent part damage while going through the supplier's process and during shipping

## **Section 11.0 Warranty Requirements**

Definitions of warranty obligations of suppliers are provided in the commercial contract in force between the supplier and Sundyne. In certain circumstances the supplier may be expected to reimburse Sundyne for warranty claims due to product non-conformance.

## **Section 12.0 Continuous Improvement**

Sundyne wants to work with suppliers to continuously improve performance in terms of cost, quality, and delivery. Specific measures of performance will be communicated to suppliers by the particular Sundyne plant for which products and services will be provided. The Supplier is expected to utilize Sundyne's Supplier Web system ([www.hssupplierportal.com](http://www.hssupplierportal.com)) to track and manage their On-time delivery and Quality metrics. User setup for this system should be coordinated through your buying agent.

It is the supplier's responsibility to track its own performance, and to improve the value provided by its product or service to Sundyne. Improvements that result in changes to processes or product must be addressed through Supplier Deviation Requests as required by this manual and the supplier's specific contract.

## **Section 13.0 Certifications**

Certain customers of Sundyne and its affiliated companies require material certifications for our products. If certifications are required for purchase from our supply base to support this requirement, the requirements will be specified on the drawings or specified in the purchase order text. As a general guideline for suppliers, our request for certifications is referenced to European Standard BS EN 10204, Inspection Documents for Metallic Products.

Any documentation that is provided under this section is to be clear and legible so as to enable good quality reproductions when received by the Sundyne entity. Documentation may be submitted to [certs@sundyne.com](mailto:certs@sundyne.com) in electronic form or by mail/fax in hard copy form. Electronic is preferred, and should be sent to the e-mail address above using the following file-naming convention:

"A\_B\_C\_D"

Where A is the Sundyne PO number, B is the PO Line Item number, C is the Part Number/Heat Code, and D is the Date.

All certifications are to be provided in the English language.

## **Section 14.0 Special Testing**

Supplier's performance for Sundyne may include requirements for other than just manufactured components. Occasionally our customers require documentation such as performance test reports or in some cases, even destructive tests. These and other special requirements will be specified in the purchase order text and supplier's performance will address these software requirements as well.

## **Section 15.0 Non-Destructive Test**

The use of non-destructive testing such as magnetic particle inspection, dye penetrant inspection, radiographic inspection, and other non-destructive inspection techniques will be as specified on the purchase order information or drawing or both. Certificates of conformance and/or other objective evidence of the tests are to be provided in the documentation provided with supplier's shipment.

Radiographs when required will typically refer to either ASTM or DIN specifications as the reference documents.

Dye penetrant and Magnetic particle inspection per ASTM, EN, and/or ISO standards, depending on material.

## **Section 16.0 Packaging, Marking and Protection**

Components are to be packaged appropriately (to prevent part damage during shipping) for the transportation mode and utilizing materials friendly to the environment and easy to dispose of or recycle at the receiving facility. Under no circumstance are materials such as foam popcorn or any other bulk materials that exhibit static charge to be used. Recyclable containers are encouraged where appropriate and we encourage our supplier partners to develop these approaches with Sundyne where the practice makes business sense. Items shipped in enclosed wood crates should be constructed with heat treated government approved wood using screws for ease of disassembly and reuse.

Sundyne and the supplier will mutually agree upon suitable packaging materials used in the process of supplying parts. We encourage the use of the supplier's standard techniques to minimize costs.

### **16.1 Part Marking**

All parts are to be identified with an appropriate part marking method per the Purchase Order or Drawing. If no requirement exists, at a minimum, the supplier must show part number, revision level, and the heat number of the raw material used in the manufacture of the parts (when applicable). These markings are to be visible after machining.

If it is impractical to physically mark the parts, bagging and/or tagging methods may be employed provided the marking method includes the above information.

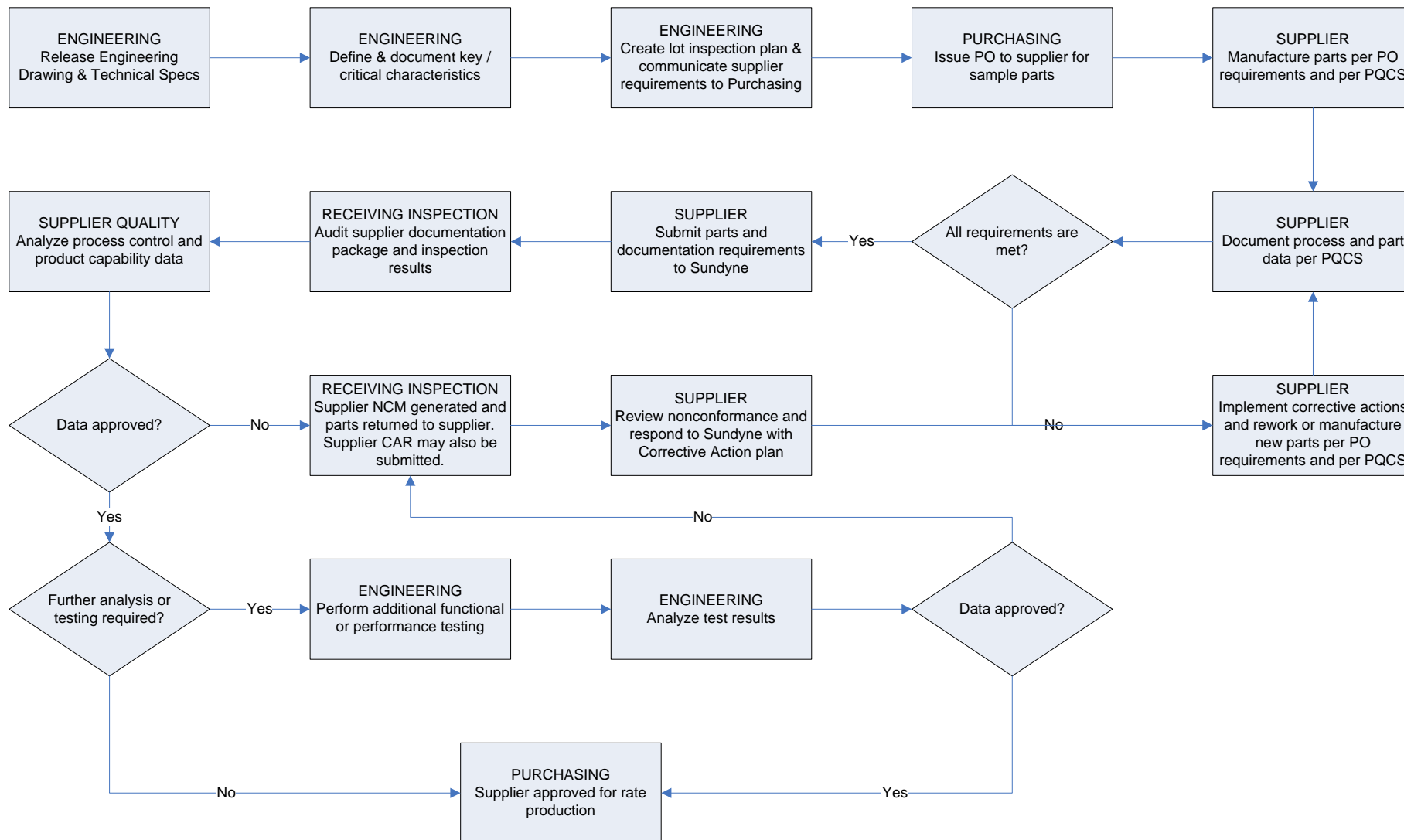
### **16.2 Part Segregation**

Parts are to be separated to preclude handling or transportation damage for multiple parts contained in one shipment.

### **16.3 Corrosion Protection**

As part of the qualification process with suppliers, we will mutually develop acceptable corrosion protection techniques that take into account the shelf life of the part and the transportation mode.

# Sundyne Part Approval Process



## Appendix A2: Instructions for PQCS (Form ISO2900)

### INSTRUCTIONS FOR COMPLETING PART QUALIFICATION CHECK SHEET FORM

#### 1. General

The Supplier Qualification Check Sheet is used by Sundyne to define and establish the specific quality requirements that a supplier must meet for a given part. The check sheet will be prepared by Sundyne and provided to the supplier early on in the procurement process. Suppliers should review the check sheet and insure that all specific requirements are understood, and then sign and return the check sheet to Sundyne. Refer to the Sundyne Supplier Quality Manual, "[Section 7.0 Communications](#)," for more details.

#### 2. Instructions

- A. Supplier Information** — Enter the supplier's name, location and contact person; completed by Sundyne.
- B. Part Information** — Enter the specific part number, part description, and revision level of the part(s) being qualified; completed by Sundyne.
- C. Key Characteristics** — Identify all key characteristics of the part. Include a reference number corresponding to the characteristic on the part's drawing/specification; completed by Sundyne.
- D. Qualification Requirements** — Check all items that are required for qualification, and provide additional detail as applicable (quantities, etc.); completed by Sundyne.
- E. Sundyne Authorization** — The issuer of the check sheet is to sign and date the form; completed by Sundyne.
- F. Supplier Sign Off** — The check sheet is to be signed and dated by an authorized supplier representative, indicating that all requirements have been reviewed and are fully understood; completed by Supplier.

**Appendix A2: PQCS (Form ISO 2900)**



**Part Qualification Check Sheet**

A. SUPPLIER INFORMATION		B. PART INFORMATION	
Name:		Part Number:	
Location:		Description:	
Contact:		Revision Level:	
C. KEY CHARACTERISTICS			
Reference #	Specification	Reference #	Specification
D. QUALIFICATION REQUIREMENT			
<input type="checkbox"/> Sample Pieces Number Required:		<input type="checkbox"/> Design FMEA	
<input type="checkbox"/> Dimensional Analysis Number parts 100% dimensional:		<input type="checkbox"/> Process FMEA	
<input type="checkbox"/> Material Test Results (per drawings or specifications)		<input type="checkbox"/> Control Plan and Flow Chart	
<input type="checkbox"/> Performance Test Results (per drawings or specifications)		<input type="checkbox"/> Gauge R & R Studies Maximum allowable gauge error:	
<input type="checkbox"/> Reliability Test Results (per drawings or specifications)		<input type="checkbox"/> Q+ Survey Minimum required survey level:	
<input type="checkbox"/> Process Capability Studies		<input type="checkbox"/> Other:	
COMMENTS			
E. SUNDYNE AUTHORIZATIONS			
Issued By: _____		Date: _____	
Signature of Authorizing Sundyne Representative			
Issued By: _____		Date: _____	
Signature of Authorizing Sundyne Representative			
F. SUPPLIER SIGN-OFF			
I have reviewed and understand the above requirements.			
_____ Signature of Authorized Supplier Representative			

## Appendix A3: Instructions for ISS Form (ISO 2901)

### INSTRUCTIONS FOR INITIAL SAMPLE SUBMISSION FORM

#### 1. General

The Initial Sample Submission (ISS) form should be completed and sent in to Sundyne whenever sample parts are required per the Approval Process for Production Parts. Refer to the Sundyne Supplier Quality Manual, Section 8.2, for more details

#### 2. Instructions

- **Control Number** — Tracking number for Sundyne Corporation; completed by Sundyne.
- A. **Supplier Information**— Enter the current date, supplier's name (and location), name of supplier contact, telephone number and fax number; completed by Supplier.
- B. **Part Information** — Enter the specific part number, part description, drawing revision level, PO number, and quantity for the parts being requested for deviation; completed by Supplier
- C. **Reason for Submittal** — Check all reasons that apply for the particular part being submitted for approval; completed by Supplier.
- D. **Required Documentation** — Check all items that are being submitted for qualification, and provide additional comments as applicable; completed by Sundyne.
- E. **Action Taken**— Status of approval with comments; completed by Sundyne.
- F. **Disposition** — Each of the responsible persons representing each function will indicate their disposition, and sign and date the form completed by Sundyne.

**Appendix A3: ISS Form (ISO2901)**



**Initial Sample Submission Form**

Control Number:  
(Completed by Sundyne)

A. SUPPLIER INFORMATION (Completed by Supplier)		B. PART INFORMATION (Completed by Supplier)		
Date:		Part Number:		
Name:		Description:		
Location:		Revision Level:		
Contact:		P.O. Number:		
Phone #:		Quantity:		
Fax #:		Required Date:		
C. REASON FOR SUBMITTAL (Check All That Apply and Completed By Supplier)				
<input type="checkbox"/> New Supplier	<input type="checkbox"/> New Part	<input type="checkbox"/> Resubmitted		
<input type="checkbox"/> New Location	<input type="checkbox"/> Material Change	<input type="checkbox"/> Process Change		
<input type="checkbox"/> New Sub-Tier Supplier	<input type="checkbox"/> Specification Change	<input type="checkbox"/> New/Modified Tools		
<input type="checkbox"/> Other:				
D. REQUIRED DOCUMENTATION (Completed by Supplier)				
Required	Included?	Comments		
<input type="checkbox"/> Sample Pieces	<input type="checkbox"/>			
<input type="checkbox"/> Inspection Plan / Dimensional Analysis	<input type="checkbox"/>			
<input type="checkbox"/> Material Test Results	<input type="checkbox"/>			
<input type="checkbox"/> Performance Test Results	<input type="checkbox"/>			
<input type="checkbox"/> Reliability Test Results	<input type="checkbox"/>			
<input type="checkbox"/> Process Capability Studies	<input type="checkbox"/>			
<input type="checkbox"/> Control Plan / Flow Chart	<input type="checkbox"/>			
<input type="checkbox"/> Other	<input type="checkbox"/>			
E. ACTION TAKEN (Completed by Sundyne)				
<input type="checkbox"/> Approved	<input type="checkbox"/> Not Approved	<input type="checkbox"/> Hold, Awaiting Supplier Information		
Comments:	Comments:	Comments:		
F. DISPOSITION (Completed by Sundyne)				
Acknowledge Date:	Signature	Date	Approve/ Disapprove	Comments
Purchasing				
Supplier Quality				
Engineering				
Manufacturing				
Other				

## Appendix A4: Instructions for Lot Inspection Plan (Form 2908)

### INSTRUCTIONS FOR LOT INSPECTION PLAN

#### 1. General

The Inspection Plan form is created by Sundyne Engineering and provided to the supplier – it must be completed by the supplier and submitted to Sundyne whenever dimensional analysis is required on sample parts per the Approval Process for Production Parts. Refer to the Sundyne Supplier Quality Manual, Section 8.2 “Sundyne Part Approval Process”, for more details.

#### 2. Instructions

- **Drawing (Part) Number** – Enter the drawing / part number of the submitted part; completed by Sundyne.
- **Drawing Revision** – Enter the revision level of the submitted part; completed by Sundyne.
- **Part Name** – Enter the part name of the submitted part; completed by Sundyne.
- **Inspection Date(s)** – Enter the date(s) inspection was conducted; completed by supplier
- **Purchase Order (PO) Number** – Enter the Sundyne PO number; completed by supplier
- **Purchase Order (PO) Quantity** – Enter the PO quantity; completed by supplier
- **Supplier** – Name of supplier submitting the analysis; completed by Sundyne or supplier
- **Inspector(s)** – Name(s) or Inspector stamps of QC personnel conducting part inspection; completed by supplier
- **Requirement** – Enter the drawing / specification requirement for each item; completed by Sundyne
- **Drawing Zone (Optional)** – Enter the drawing zone in which each feature is located; completed by Sundyne
- **Inspection Method** – Identify the type of measuring device/measuring technique used for each feature; suggested method may be completed by Sundyne, actual method completed by supplier
- **Measurement Results** – Enter the actual measurement results obtained for each sample and feature. Variable data must be supplied where applicable. Attribute data may only be supplied where variable data is not applicable; completed by supplier

**Appendix A4: Lot Inspection Plan (Form ISO2908)**



**Lot Inspection Plan**

<b>Drawing Number:</b>		<b>PO Number:</b>	
<b>Drawing Revision:</b>		<b>PO Quantity:</b>	
<b>Part Name:</b>		<b>Supplier:</b>	
<b>Inspection Date(s):</b>		<b>Inspector(s):</b>	

<b>Feature #</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>Requirement (Dim &amp; Tol, Spec, Dwg Note)</b>									
<b>Drawing Zone (Optional)</b>									
<b>Inspection Method</b>									
<b>Sample Number</b>	<b>#1</b>								
	<b>#2</b>								
	<b>#3</b>								
	<b>#4</b>								
	<b>#5</b>								
	<b>#6</b>								
	<b>#7</b>								
	<b>#8</b>								
	<b>#9</b>								
	<b>#10</b>								

Note: Variable data must be recorded where applicable. Attribute data may be used only where variable data is not applicable.

Note: If additional samples or features require inspection, modify Feature # and/or Sample Number field(s) and re-print/re-save form.

## Appendix A5: Instructions for SDR

### INSTRUCTIONS FOR SUPPLIER DEVIATION REQUEST FORM

#### 1. General

If the supplier needs to document a request for a product or process deviation, they use the Supplier Deviation Request (SDR). This form is to be sent to the designated Sundyne contact person for processing. Refer to the Sundyne Supplier Quality Manual, Section 9.3, for more details.

#### 2. Instructions

- **Control Number** – Enter the tracking number for Sundyne Corporation; completed by Sundyne.
- A. Supplier Information** - Enter the current date, supplier's name (and location), name of supplier contact, telephone # and fax #; completed by Supplier.
- B. Part Information** - Enter the specific part number, part description, drawing revision level, PO number, and quantity for the parts being requested for deviation; completed by Supplier
- C. Deviation Request** - Identify whether the request is (*completed by Supplier*):
  1. ...product or process related
  2. ...a first-time request or a repeat request
  3. ...a permanent or temporary request
  - **Current Requirement/Process** - Fully describe the current requirement/specification or process; completed by Supplier.
  - **Proposed Deviation** - Fully describe the requested deviation from the current requirement/specification or process; completed by Supplier.
  - **Reason for Deviation/Corrective Action** - Fully describe the reason for the deviation. Also, identify the corrective actions to be taken to prevent a similar deviation in the future, if applicable; completed by Supplier.
- D. Sundyne Approval/Disapproval** -The responsible persons representing each function will indicate their approval or disapproval, and sign and date the form; completed by Sundyne.
- E. Disposition** - Identify whether the deviation requires a permanent drawing change; if so, enter the PCA#. Identify whether the deviation requires a corrective action; if so, enter the CA#; provided by Sundyne.

**Appendix A5: SDR (Form ISO2903)**



**Supplier Deviation Request Form**

<b>Control Number:</b> _____ <i>(Completed by Sundyne)</i>				
<b>A. SUPPLIER INFORMATION</b> <i>(Completed by Supplier)</i>		<b>B. PART INFORMATION</b> <i>(Completed by Supplier)</i>		
Date: Name: Contact: Phone #: Fax #:		Part Number: Description: Revision Level: P.O. Number: Quantity:		
<b>C. DEVIATION INFORMATION</b> <i>(Completed By Supplier)</i>				
<i>Deviation request is:</i>				
<input type="checkbox"/> Product Related		<input type="checkbox"/> 1 <sup>st</sup> Time	<input type="checkbox"/> Permanent	
<input type="checkbox"/> Process Related		<input type="checkbox"/> Repeat	<input type="checkbox"/> Temporary/Duration:	
<b>Current Requirement/Process</b>		<b>Proposed Deviation</b>		<b>Reason for Deviation/Corrective Action</b>
<b>D. SUNDYNE APPROVAL/DISAPPROVAL</b> <i>(Completed by Sundyne)</i>				
<i>Note: Purchasing has final approval.</i>				
<b>Acknowledgement:</b>	<b>Signature:</b>	<b>Date:</b>	<b>Approve/Disapprove:</b>	<b>Comments</b>
Purchasing				
Supplier Quality				
Engineering				
Manufacturing				
Other				
<b>E. DISPOSITION</b> <i>(Completed by Sundyne)</i>				
Drawing Change Required?		<input type="checkbox"/> Yes	<input type="checkbox"/> No	If, yes, PCA# _____
Corrective Action Request Required?		<input type="checkbox"/> Yes	<input type="checkbox"/> No	If yes, CA # _____
Final Disposition/Comments:				

## **Appendix A6: Q+ Survey Form (ISO 2906)**

### **INSTRUCTIONS FOR Q+ SURVEY FORM**

#### **1. General**

The Q+ Survey is used to gain a preliminary benchmark of the supplier's Quality Management System. The survey is completed by the supplier and is evaluated by Sundyne.

#### **2. Instruction**

A. Supplier performs a self-assessment of each category and sub-category, using the following criteria:

- L1 No System, or partially implemented and/or documented system
- L2 Has a documented system
- L3 Has a documented system and shows measured results
- L4 Has a documented system and showed continuous improvement. Provides documentation providing evidence for each category

B. Return Q+ survey to Sundyne for evaluation.

**Q- Plus Supplier Survey**

	L-1 No System Or Informal System *	Partially Documented/ Partially Implemented System*	Documented System, Fully Implemented	D-cmntd System, Implemented & Measured Results	D-cmntd System, Implm'td, Meas'rd & Continuous Improvement	List Supporting Procedures/ Documents
<b>1.0 MANAGEMENT RESPONSIBILITY</b>						
1.1 Quality policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Quality objectives w/ measurement system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.2 Defined organizational structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Support of quality system throughout org.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.3 Quality improvement plans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Measured continuous improvement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<b>2.0 QUALITY SYSTEM</b>						
2.1 Quality manual	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.2 Quality planning	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.3 Quality measurement system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
System for evaluating internal and external failure costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
2.4 Auditing program (External/Internal)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<b>3.0 DESIGN CONTROL</b>						
3.1 Product introduction system	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
First article approval	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Reliability Analysis	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Internal and external (customers and suppliers) cross functional participation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Design verification/validation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<b>4.0 DOCUMENT AND CONTRACT CONTROL</b>						
4.1 Drawing & specification change procedure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Control of marked-up & obsolete drawings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4.2 Contract review procedure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<b>5.0 PURCHASED MATERIAL CONTROL</b>						
5.1 Purchase material control procedure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Source selection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Incoming material control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Supplier measurement (rating) system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Supplier results reporting (to suppliers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Supplier evaluation system (survey/audit)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

\* Improvement plans are required for all areas marked in these columns. A documented system, fully implemented must be accomplished prior to a site audit. You must be able to show evidence for the scores that you choose.

**Q- Plus Supplier Survey**

	L-1 No System Or Informal System*	Partially Documented/ Partially Implemented System*	L-2 Docu-mented System, Fully Imple-mented	L-3 D-cmntd System, Imple-mented & Meas-ured Results	L-4 D-cmntd System, Implm'td, Meas'rd & Contin-uous Im-provement	List Supporting Procedures/ Documents
<b>6.0 PROCESS CONTROL</b>						
6.1 Control plans and flow charts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
6.2 Operator instructions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
6.3 Process capability studies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
First pass yields	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
6.4 Preventive maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
6.5 1 <sup>st</sup> piece/In-process Inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
<b>7.0 INSPECTION AND TESTING</b>						
7.1 Tester, inspector, and technician training	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
Testing procedures with parameters and frequencies	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
7.2 Final inspection procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
<b>8.0 CONTROL OF MEASURING AND TEST EQUIPMENT</b>						
8.1 Calibration system	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Calibration status and traceability	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Gauge storage and handling	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Gauge repeatability and reproducibility	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<b>9.0 MATERIAL CONTROL</b>						
9.1 Handling and disposition of non-conforming material	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
9.2 Material identification system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Material traceability	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<b>10.0 CORRECTIVE AND PREVENTIVE ACTION</b>						
10.1 Root cause analysis	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Corrective action process (Internal/External)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Customer complaints/field failures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
10.2 Use of mistake proofing techniques	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Product and process FMEAs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<b>11.0 HANDLING, STORAGE, PACKAGING, AND DELIVERY</b>						
11.1 Special customer handling, storage, and delivery requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Handling and storage methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Packaging development approval system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Inventory control system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

\* Improvement plans are required for all areas marked in these columns. A documented system, fully implemented must be accomplished prior to a site audit. You must be able to show evidence for the scores that you choose.

**Q- Plus Supplier Survey**

	L-1 No System Or Informal System *	Partially Documented/ Partially Implemented System*	L-2 Docu-mented System, Fully Imple-mented	L-3 D-cmntd System, Imple-mented & Meas-ured Results	L-4 D-cmntd System, Implm'td, Meas'rd & Contin-uous Im-provement	List Supporting Procedures/ Documents
<b>12.0 TRAINING</b>						
12.1 Training program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Training records	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Certification for key processes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Training effectiveness measurements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
12.2 Quality-related training and education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____

\* Improvement plans are required for all areas marked in these columns. A documented system, fully implemented must be accomplished prior to a site audit. You must be able to show evidence for the scores that you choose.

Issues	Comments			
What are the short-term machine capabilities (Cpk's) of key processes?				
What are the first pass yields percentages in final assembly?				
What percents of lots inspected at receiving inspection are rejected?				
What percent of material used (not included in off-al) is scrapped?				
What is the gauge repeatability and reproducibility (Gauge R&R) or gauges used to measure key characteristics?				
How many CAR's (corrective action requests) were issued to your plant by all UTC plants in the last 12 months?				
How many lots from your plant were rejected by all UTC plants in the last 12 months?				
What critical components and/or processes are outsourced?				
How many hours training does each employee receive annually?				
Do you have a SPC program in use?				
Does your inspection depart use sampling plans?				
Who are your major customers and what percentage of your total do they make up?				
List other UTC Plants that are your customers and PPM's at those plants for the last 12 months.	Plant		PPM	
	Plant		PPM	
	Plant		PPM	

**SAMPLE**

Q- Plus Supplier Survey – Environment, Health, and Safety Module

	L-1 No System Or Informal System *	Partially Documented/ Partially Implemented System*	L-2 Documented System, Fully Implemented	L-3 Documented System, Implemented & Measured Results	L-4 Documented System, Implemented, Measured & Continuous Improvement	List Supporting Procedures/ Documents
<b>13.0 Environmental, Health and Safety</b>						
13.1 Personal Protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Equipment Process Hazard program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Certification for key processes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Metrics Used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Other Comments
<p style="font-size: 48px; color: red; opacity: 0.5; transform: rotate(-30deg);">SAMPLE</p>

## Appendix A7: Supplier Corrective Action Request (CAR) Form (ISO 2463)

### INSTRUCTIONS FOR SUPPLIER CORRECTIVE ACTION REQUEST (CAR)

#### 1. General

Supplier Corrective Action requests are utilized when discrepant purchased hardware is found at Sundyne from the Supplier. The Supplier shall utilize this form to document their Root Cause and Corrective Actions (RRCA) to eliminate recurrence of the issue as defined on the form.

#### 2. Instruction

A. Sundyne identifies the issue and fills out the following information:

- **Date** – Date the issue was found
- **CAR #** - Sundyne generated tracking number
- **NCM #** - Sundyne system generated tracking number. This number will match the Supplier Quality Report detail on Supplier Web
- **Supplier** – Name of the supplier
- **To** – Name of the focal point at the supplier that will have responsibility of returning the CAR form
- **Problem Reported/Detected At** – Where in Sundyne the defect was detected
- **From** – Name of the focal point at Sundyne that is tracking the CAR
- **CC: (Contact Manager)** – (not required). Sundyne Manager of Supplier Quality and Development

The proceeding box will also include the focal point for the CAR and the response date required from the Supplier. It is the Supplier's responsibility to return this form on or before the date provided in this field.

- **A. Problem Description** – Contains part name/description, Sundyne part number, Revision Level of part, and quantity of defective parts found at Sundyne. A brief description will be provided in the space below this information.

B. The Supplier is responsible for filling out the following fields:

- **B. Root Cause** – utilizing common Root Cause tools such as 5-Why, Fishbone/Ishikawa diagrams, Fault Trees, etc., the supplier must define the fundamental breakdown(s) in the product or process that most contributed to the defect being found at Sundyne.
- **C. Corrective Action** - Summarize short-term corrective actions, and indicate estimated time to completion. For the check box, the Supplier must review any current stock for the described condition in box A of this form at their facility and purge if necessary.
- **D. Preventive Action** – The Supplier must identify the Poka-Yoke/Mistake Proofs being implemented in the product or process that will eliminate future occurrences of this issue at Sundyne. Signature of focal point and date must be provided.
- **G. Attachments/Supporting Data** - all supplemental supporting information (pictures, routings, flow maps, etc.) should be attached to this section.

Once these fields are complete, please return to Sundyne focal point as described in the **From** section above.

C. Sundyne will review the package and determine if the actions described in Parts B, C, D, and G are adequate. If not, the form will be rejected and returned to the Supplier for re-evaluation.



## Supplier Corrective Action Request

Date:	CAR #:	NCM #:	Supplier:
To:		Problem Reported/Detected At: <input type="checkbox"/> Receiving Inspection <input type="checkbox"/> Quality Audit <input type="checkbox"/> In Process <input type="checkbox"/> Customer (include failed parts) <input type="checkbox"/> Final Assembly <input type="checkbox"/> Other _____	
From: Phone #: E-Mail:		Cc: (Contact Manager)	
The adverse condition described in space (A) below requires immediate corrective action. Please indicate the root cause and corrective and preventative actions to be taken in the appropriate space below and return this form and any necessary documentation to _____ by _____			
<b>A. PROBLEM DESCRIPTION</b> (including part description, part #, revision level, frequency, costs, field installation data, etc.)			
Part Description: _____ Part #: _____ Rev. Level: _____ Qty: _____			
<b>B. ROOT CAUSE</b>			
<b>C. CORRECTIVE ACTION</b> (Summarize short-term corrective actions. Indicate estimated action completion.)			
<input type="checkbox"/> Has Work In Process parts been identified at your site and purged as necessary? (required)			
<b>D. PREVENTIVE ACTION</b> (Summarize long-term preventive actions. Indicate estimated action completion.)			
Signature:		Date:	
<b>E. SUNDYNE APPROVAL</b>			
<input type="checkbox"/> Accept <input type="checkbox"/> Reject			
Comments:			
Signature:		Date:	
<b>F. ACTION VERIFIED</b> (corrective action described has been implemented and satisfactorily meets the intent of the request.)			
Comments:			
Signature:		Date:	
Copies:			

**\*\*\* if attachments are available, please attach them to the following page \*\*\***

<b>G. ATTACHMENTS/SUPPORTING DATA</b> – embed attachments/supporting data (Word, PowerPoint, PDF, pictures, etc) here
---

## Appendix A8: Instructions for Control Plan Form (ISO 3052)

### 1. General

When identified on the Part Qualification Check Sheet as a requirement of the Sundyne Part Approval Process, the supplier is responsible for completing a Process Control Plan for the part (and related processes) being supplied.

The Process Control Plan is the single source document used to demonstrate how critical or key process and product characteristics will be monitored and controlled in the production environment. A single control plan may be utilized for a family of parts that are produced by the same processes.

The control plan template shown below may be utilized by the supplier, or an alternate form of a control plan may be used provided the content of the template shown below is met.

### 2. Instruction – See below and also the Automotive Industry Action Group (AIAG) Advanced Product Quality Planning (APQP) Manual

- **Prototype / Pre-Launch / Production** – Use an “X” to identify which phase of production the control plan applies.
- **Control Plan Number** – Unique control plan tracking number, if applicable.
- **Part Number & Revision** – Self explanatory. If a single control plan is used for a family of parts, the base part number of the part family may be used without reference to revision.
- **Part Name / Description** – Self explanatory.
- **Supplier / Manufacturing Cell** – Supplier company name (Manufacturing Cell is used for internal Sundyne purposes only).
- **Primary Contact Name & Phone** – Supplier primary point of contact. Typically a contract / sales manager, or a member of supplier engineering or quality departments.
- **Core Team Members** – Names of additional supplier team members. Contact information is not required.
- **Supplier Engineering Approval Name** – Self explanatory.
- **Supplier QA Approval Name** – Self explanatory.
- **Date (Orig)** – Date of initial approval / release of the control plan.
- **Date (Rev)** – Date of the latest revision of the approved / released control plan.
- **Customer Engineering Approval Name** – Self explanatory. Customer (Sundyne) approval must be submitted in writing. No verbal approvals allowed.
- **Customer QA Approval Name** – Self explanatory. Customer (Sundyne) approval must be submitted in writing. No verbal approvals allowed.
- **Other Customer Approval Name** – Self explanatory. Customer (Sundyne) approval must be submitted in writing. No verbal approvals allowed.
- **Part / Process Number** – Identification of the part number or process operation number being controlled. Usually referenced from a process flow chart and/or part inspection plan.
- **Operation Description** – The steps of the manufacturing and inspection processes taken from the process flow chart.
- **Machine, Device, Tools, Jig for Manufacturing** – List machine, tool, or jig numbers associated with the operation.
- **Characteristics, Number** – Unique and typically sequential identification number of process or product characteristics being controlled.
- **Characteristics, Product** – Use an “X” to identify product characteristics.
- **Characteristics, Process** – Use an “X” to identify process characteristics.
- **Characteristics, CTQ / KPC** – Identify the characteristics type, if applicable. Contact Sundyne Engineering for further information if needed.
- **Specification & Tolerance** – Document the process or product requirement and allowable tolerance.
- **Methods, Measurement Technique** – List the inspection tool or gage number used to inspect for conformance.
- **Methods, Sample Size** – Document the sampling rate, typically shown as X of Y where X is the sampling rate and Y is the lot or batch size.
- **Methods, Sample Frequency** – Document the frequency at which measurements will occur. Examples are 1<sup>st</sup> piece/last piece, once per shift, daily, hourly, etc.
- **Methods, Control Method** – Document the method to be used to monitor control. Examples are Xbar-R chart, Xbar-S charts, 100% inspection, go/no-go, p chart, np chart, c chart, etc.
- **Reaction Plan** – Document the actions that will be taken if an out of control or out of tolerance condition is found.

**Appendix A8: Control Plan Form (ISO 3052)**



**Process Control Plan**

\_\_\_ Prototype

\_\_\_ Pre-Launch

\_\_\_ Production

Page \_\_\_ of \_\_\_

Control Plan Number:		Primary Contact Name & Phone:		Date (Orig):		Date (Rev):	
Part Number & Rev:		Core Team Members:		Cust Eng Approval Name & Date:			
Part Name / Desc:		Supp Eng Approval Name & Date:		Cust QA Approval Name & Date:			
Supplier / Manufacturing Cell:		Supp QA Approval Name & Date:		Other Cust Approval Name & Date:			

Part / Process Number	Operation Description	Machine, Device, Jig, Tools for Mfg	Characteristics				Specification & Tolerance	Methods				
			No.	Product	Process	CTQ / KPC		Measurement Technique	Sample Size	Sample Freq.	Control Method	Reaction Plan