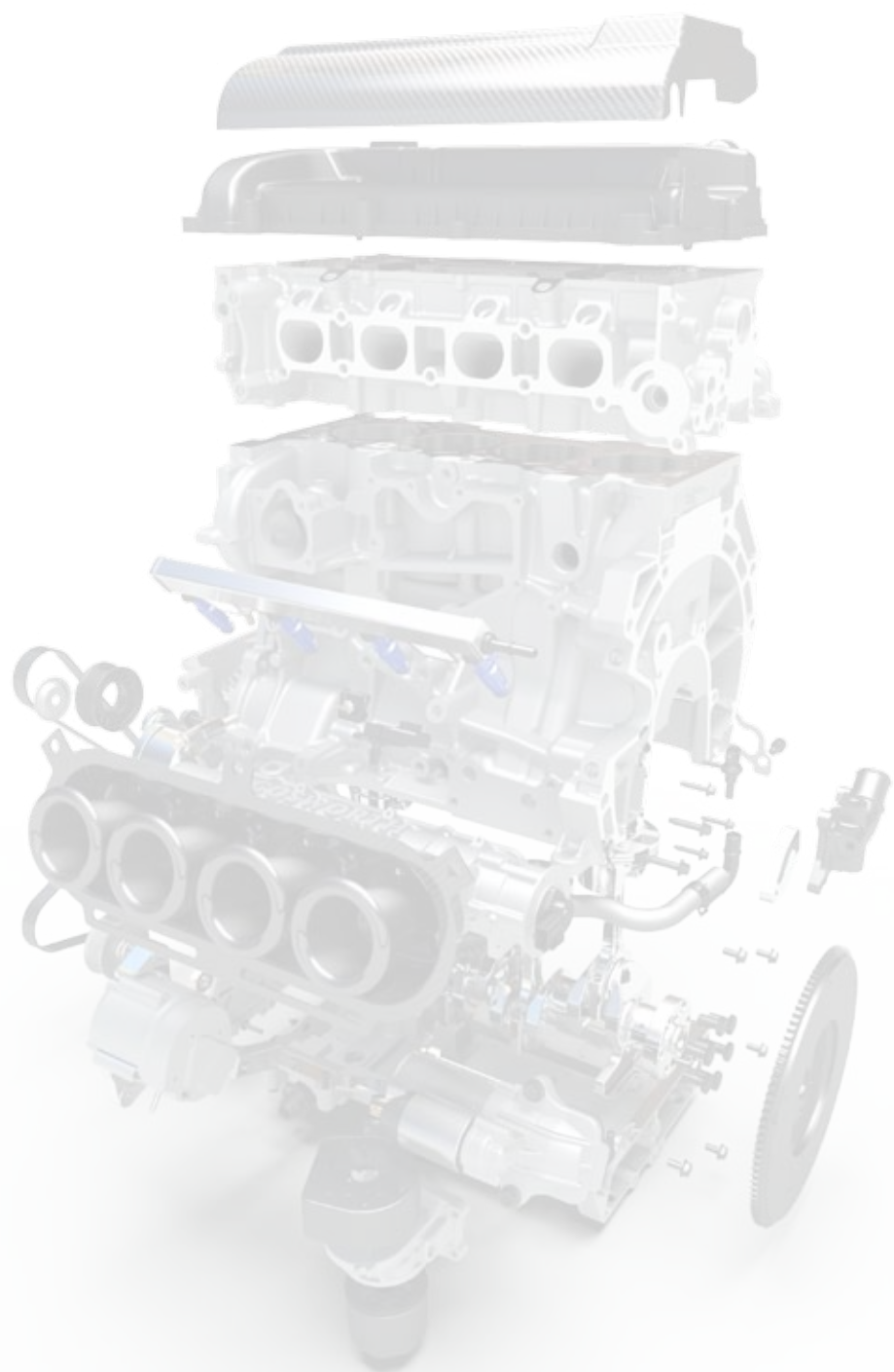


# COSWORTH



**Supplier Quality Assurance**



# Preface

---

We strive to continually improve our process performance by meeting quality objectives. It is imperative that our suppliers operate under the “zero defects and 100% on time delivery philosophy” Emphasis should be on defect prevention and the reduction of variation in the supply chain.

This SQA booklet is based on the quality system requirements of Cosworth and is considered an integral and legally binding part of any Cosworth purchase order referencing this manual. Through implementation and adherence to the quality standards stated in this booklet, Cosworth look forward to long and mutually beneficial relationships with our suppliers.

**Ian Allan**, Quality Manager

## Quality Department Representatives

---

**Andrew Masters**

andrew.masters@cosworth.com

**George Jobe**

george.jobe@cosworth.com

**Robert Sinclair**

robert.sinclair@cosworth.com

# Contents

---

<b>1</b>	<b>Introduction</b>	
1.1	Revision Control	6
1.2	Application	6
1.3	Implementation	6
<b>2</b>	<b>Expectations</b>	
2.1	Quality/Delivery	7
2.2	Cooperative Management Attitude	7
2.3	Confidentiality	7
<b>3</b>	<b>Supplier Qualification &amp; Performance</b>	
3.1	Supplier Monitoring	8
3.2	Supplier Quality System Requirements	8
3.3	Notification Responsibilities	8
3.4	Sub-Tier Management	8
<b>4</b>	<b>General Requirements</b>	
4.1	Contract/Purchase Order	9
4.2	Traceability Verification	9
4.3	Certificate of Conformance	9
4.3.1	Subsequent Deliveries	9
4.4	First Article Inspection	10
4.4.1	Re-submission Guidelines	10

<b>4.5</b>	<b>General Inspection / Test Requirements</b>	<b>10</b>
4.5.1	Visual Inspection	11
4.5.2	Dimensional Inspection / Material Testing	11
4.5.3	Material Test Reports	11
4.5.4	Right of Access	11
4.5.5	Source Inspection	11
4.5.6	Measuring & Test Equipment	11
4.5.7	Inspection Records & Status	12
	4.5.7.1 Records of Compliance	12
	4.5.7.2 Status Identification	12
4.5.8	Non Conforming Product	12
4.5.9	Corrective Action	12
4.5.10	Identification Marking	13
4.5.11	Component Cleanliness	13
4.5.12	Packaging & Shipping Requirements	13
4.5.13	Record Retention	13
<b>5</b>	<b>Specific Product Requirements</b>	
5.1	Special Process Approval	14
<b>6</b>	<b>Reference Documents and Forms</b>	
6.1	Reference Documents	14

# 1 Introduction

---

This Supplier Quality Assurance booklet outlines the expectations and requirements with which suppliers and their sub- tiers must comply when providing products specified on the Cosworth purchase order. Suppliers are fully responsible for the quality and delivery of their products and their sub- tier suppliers. Depending on the specific order not all sections or sub sections apply. All prior documented supplier quality requirements remain valid.

All communications relative to the requirements of the purchase order, drawings, specifications or this manual should be directed to the respective Business Unit Buyer and/or the Quality representative.

All purchase orders that include a reference to this booklet constitute acceptance and commitment on behalf of the supplier to comply with this booklets content at the purchase order stated revision.

This booklet and any other Cosworth documentation is for the sole use of fulfilment of the order. You should not, without written consent from Cosworth, disclose information or knowingly permit to be published any information directly relating to the business of Cosworth which is made available to you on a confidential basis or has otherwise come into your possession.

## 1.1 Revision Control

- If there is a need to revise this booklet then the Quality representative will notify suppliers
- Products or services supplied under the purchase order shall be produced, inspected and tested in accordance with the specifications and drawings referenced at the time of the purchase order acceptance

## 1.2 Application

The expectations and requirements described in this booklet apply to all suppliers of production components, materials and/or services. Suppliers must meet all specified requirements herein.

## 1.3 Implementation

Suppliers are responsible for the development, documentation, implementation, and maintenance of a quality system with a goal of compliance with AS9100, ISO9001 and BS EN 14001 Quality System requirements. In certain circumstances Cosworth may choose to place an order with a supplier who does not have a formal certified QMS. In this instance the supplier will be required to complete a "specific" Cosworth Supplier Quality Assurance Questionnaire.

# 2 Expectations

---

## 2.1 Quality/Delivery

Cosworth quality and delivery targets are zero defect occurrence and 100% on time delivery. Any defect may result in rejection and return of defective product to the supplier.

As a company we intend to at some stage move away from inspecting goods that come to us from trusted suppliers. We regard those trusted suppliers to have formal quality systems that meet the requirements of ISO9001, AS9100 and as such can self-certify their products.

Cosworth expects that the supplier will develop processes and procedures to prevent occurrence of defects and strive to continually improve on those processes.

Any query concerning material certificates, applicable sealed routes, special processes must be directed to the Cosworth Quality representative.

## 2.2 Cooperative Management Attitude

Cosworth expects its supplier's senior management to share its commitment of meeting customer's quality and delivery expectations through continuous improvements.

## 2.3 Confidentiality

Cosworth Limited shall only disclose proprietary information to suppliers on a need to know basis in accordance with an established confidential arrangement via a signed, active Non-Disclosure Agreement.

Suppliers shall take care in protecting all proprietary information. This includes notification to Cosworth prior to transfer of proprietary information to a third party, wherein Cosworth will make the decision to initiate a Non-Disclosure Agreement with the third party.

# 3 Supplier Qualification & Performance

---

## 3.1 Supplier Monitoring

Supplier performance will be continuously monitored. They will be measured on their ability to meet Cosworth's minimum requirements for product quality and delivery performance. Suppliers will be notified periodically of their performance.

## 3.2 Supplier Quality System Requirements

Objective evidence shall be on file verifying that a system exists and is being kept up to date. If required procedures and process records shall be made available for examination by an authorized Cosworth quality representative.

## 3.3 Notification Responsibilities

If there is a change in the supplier's facilities, process equipment, senior management, or sub-tier suppliers, Cosworth should be notified of changes in writing. Additionally, if the supplier loses an accrediting agency certification then the supplier shall notify the Cosworth Buyer and Quality representative in writing within 5 working days. When the supplier's accreditation certificate expires, a copy of the new certificate shall be sent to the Cosworth Quality representative.

## 3.4 Sub-Tier Management

Cosworth require that suppliers maintain responsibility for all sub – tier suppliers, flow down purchase order requirements and provide guidance to their supply base consistent with our purchase order provisions.

The supplier shall have a process in place to ensure that all sub – tier suppliers have and maintain the ability to provide defect free products in accordance with Cosworth's delivery requirements.

The supplier shall ensure that all sub-tier suppliers provide timely response to quality concerns.

If a situation arises whereby we need to take an active role with a sub – tier supplier to address a specific concern, Cosworth will do so only after supplier notification.

Note: If there is a requirement on the Cosworth purchase order regarding "Special Processes" See Section 5 - Specific Product Requirements.

# 4 General Requirements

---

## 4.1 Contract/Purchase Order

The purchase order is a legal contract between Cosworth and the supplier. If it is necessary to deviate from the conditions of the purchase order then written authorization must be obtained from Cosworth.

The Cosworth Buyer will authorize any cost or schedule changes.

The Cosworth Quality representative will authorize any technical or quality changes.

## 4.2 Traceability Verification

The supplier must maintain traceability throughout all steps of their manufacturing process including any outside processing. All components must be traceable back to the receipt of raw materials.

## 4.3 Certificate of Conformance

If required by the Cosworth purchase order the supplier will submit a copy of his or her certificate of conformity with each shipment of material or products. The suppliers C of C shall be signed by an authorized person signifying that all products have met the requirements of the Cosworth purchase order including any drawings or specifications.

The suppliers Certificate of Conformity must reference any material supplied to them by Cosworth.

### 4.3.1 Subsequent Deliveries

Subsequent deliveries must be supported with the suppliers C of C, the material certificate which includes the chemical and mechanical test results, C of C of any special processes which may also include test results or process documentation.

## 4.4 First Article Inspection

The supplier is required to prepare a First Article Inspection Report for each part supplied to Cosworth. We would expect the supplier to use AS9102 document for the purpose of submitting a FAIR but on request Cosworth can supply a FAIR template (0150) that would suffice.

The supplier must detail specific, laboratory (chemical & mechanical) / dimensional / other inspection and test results, and certify compliance.

Mill certificates detailing chemical and mechanical properties must accompany the report when suppliers provide their own material for manufacture of parts. Certificates of conformity detailing test results, as necessary, for all operations and treatments subcontracted by the supplier must be provided.

The results for a FAIR can comprise of data from first off inspection samples, as parts are produced and checked for conformance to every requirement on the component drawing and associated specification(s). Recorded results must be legible and obtained from output produced by series production tooling and conditions. Co-ordinate measuring machine print outs on hole positions etc. are acceptable as long as they are easily cross referenced to the drawing.

### 4.4.1 Re-submission Guidelines

If a process or product change is necessary then Cosworth require a FAIR re-submission.

Some examples of changes:

- Using a process or material other than that used in the previously approved part
- Production from new or modified tooling
- A break in production or product produced after tooling has been inactive for a period of 2 years
- A request from the Cosworth Buyer or Quality representative
- Design up-issue to include changes

## 4.5 General Inspection / Test Requirements

Inspection and test should be carried out in accordance with the Cosworth purchase order and related drawing / specification requirements. The supplier should use equipment that is appropriate for the required tolerances and characteristics of the parts to be manufactured / tested. The supplier will use measuring and test equipment that is calibrated and traceable to national standards.

#### **4.5.1 Visual Inspection**

If it is necessary to carry out “visual inspection only” then the criteria for this will be defined by Cosworth.

#### **4.5.2 Dimensional Inspection / Material Testing**

If the supplier does not have the necessary equipment to conduct the required inspection / tests, an accredited third-party inspection source can be used at the supplier’s expense.

#### **4.5.3 Material Test Reports**

Refer to ST0275 - Inspection and Paperwork Requirements for Parts Manufactured Externally

#### **4.5.4 Right of Access**

Cosworth reserves the right of access to the supplier’s premises during the course of the contract. This may include access to the supplier’s sub-tier facility. Access may also be required by our Customer or our registrar (BSI).

#### **4.5.5 Source Inspection**

Any items and quality documentation covered by our purchase order may be subject to our Customer or Cosworth personnel carrying out source inspection prior to shipment. In order to accommodate source inspection representatives, the supplier shall make facilities, equipment, inspection records and assistance readily available. Source inspection shall not replace supplier inspection activities.

#### **4.5.6 Measuring & Test Equipment**

The supplier shall maintain a calibration system which includes gauges, tools and fixtures used to verify conformity to requirements of the purchase order. The calibration carried out shall be in accordance with a recognized standard and shall address the criteria described in the selected standard. Measuring and test equipment must also meet all requirements imposed in applicable specifications, such as those addressing special processes.

## **4.5.7 Inspection Records & Status**

### **4.5.7.1 Records of Compliance**

Records of compliance shall be formally documented and maintained to ensure that the supplier's products or services are compliant with the Cosworth identified purchase specifications, any material specifications and contract requirements.

### **4.5.7.2 Status Identification**

The supplier should maintain a system identifying the inspection and testing status of any supplied product.

## **4.5.8 Non Conforming Product**

Cosworth expect the supplier to establish controls to ensure that products that do not conform to our purchase order requirements are identified, segregated, dispositioned and controlled to prevent inadvertent use. All costs associated with non conforming products, including handling, material replacement, inspection, rework etc may be charged back to the supplier. If the supplier identifies a non conformance with product or materials then they should notify Cosworth. If they choose to quarantine the product they should notify the Cosworth Quality representative and await any further instructions.

A supplier's request for a concession to accept non conforming product must be made directly to the Cosworth Quality Manager. If granted, a copy of the concession must accompany the conceded parts when delivered. Use template number 0390.

## **4.5.9 Corrective Action**

The supplier is responsible for implementing a quality system capable of resolving problems affecting quality and correcting those conditions. The supplier's corrective action should be documented and as a minimum include:

- Identification of root cause
- An analysis of similar items that may be affected
- A list of improvements and actions to prevent problem re occurrence
- Records that are maintained and available to Cosworth (If required)

If Cosworth receive non conforming product we will issue the supplier with an 8D Vendor Quality Report carrying a unique notification number. We will require a response within 48 hours that the supplier has received the 8D Vendor Quality Report and a completed 8D returned to Cosworth with 5 working days of the date stated on the 8D. The Vendor Quality Report 8D will remain open until the Cosworth QA representative has verified

evidence that the supplier's actions were effective. A failure by the supplier to respond to the 8D in a timely manner may place the supplier in a "Risk" category.

#### **4.5.10 Identification Marking**

If required the supplier will ensure that supplied products are legibly marked as per the specified drawing requirement or the Cosworth purchase order. The supplier must ensure that the part marking is as permanent as the normal life expectancy of the item and be capable of withstanding the intended operating environment and cleaning procedures.

**NOTE:** If a batch of parts is manufactured and requires each individual part to have a Unique Identification (UID) then a list of the numbers must be put on a label on the outside of the box they are packed in and the accompanying supplier's advice note or C of C must list the UID numbers.

#### **4.5.11 Component Cleanliness**

The supplier is responsible for delivering parts to Cosworth that are free of any surface contaminant that will be detrimental to the items appearance or functional performance.

#### **4.5.12 Packaging & Shipping Requirements**

Refer to ST0205 "Corrosion Protection of Cosworth Components". Packaging and shipping of product to Cosworth is at the supplier's discretion unless otherwise specified by Cosworth. Product must be protected against transit damage, deterioration and contamination.

#### **4.5.13 Record Retention**

The supplier shall have a system for maintaining control of records of compliance to applicable procurement documents, drawings / specifications and standards as previously defined. Records shall remain legible, readily identifiable & retrievable. Records shall be available for review by customers & regulatory authorities in accordance with the Cosworth contract or regulatory requirements. The supplier shall maintain the records for a minimum of 5 years after final shipment.

# 5 Specific Product Requirements

---

## 5.1 Special Process Approval

Cosworth maintain a list of “Special Processes” This ST listing is available to the supplier by making a request to the Quality representative.

# 6 Reference Documents and Forms

---

## 6.1 Reference Documents

- AS 9100 - Quality Management Systems - Aerospace Requirements
- ISO 9001 - Quality Management Systems
- Cosworth ST Listing - Special Processes
- BS EN ISO 14001 (if applicable)
- Cosworth Vendor Quality Report (8D) Template - 0345
- Supplier Concession Template - 0390
- ST0205 - Corrosion Protection of Cosworth Components
- ST0275 - Inspection and Paperwork Requirements for Parts Manufactured Externally



# COSWORTH

The Octagon  
St James Mill Road  
Northampton  
NN5 5RA  
United Kingdom

T: +44 (0) 1604 598300  
F: +44 (0) 1604 596301