

GARDNER AEROSPACE

SUPPLIER QUALITY REQUIREMENTS MANUAL



Issue Number: 6

Issue Date: 18/09/2019

Contents

Revision Summary.....	4
1.0 Introduction	5
2.0 Supplier Quality System Requirements	6
3.0 Purchase Order Clauses	7
4.0 Supplier Quality Management Systems.....	10
4.1 General Requirements	10
4.2 Documentation Requirements	10
4.2.1 General.....	10
4.2.2 Quality Manual.....	10
4.2.3 Control of Documents.....	10
4.2.4 Control of Records	11
5. Management Responsibility	11
6. Resource Management.....	11
7. Product Realisation	12
7.1 Planning of Product Realisation	12
7. 1. 1 Project Management	13
7. 1.2 Risk Management	13
7.1.3 Configuration Management.....	13
7.1.4 Supplier Driven Changes/ Work Transfers.....	14
7.2 Customer-related Processes	14
7.2. 1 Requirements Related to the Product	14
7.4 Purchasing.....	14
7.5 Production and Service Provision	15
7.5. 1 Control of Production and Service Provision	15
7.5.1.1 Production Process Verification.....	15
7.5.1.2 Control of Production Process Changes.....	16
7.5.1.3 Control of Production Equipment, Tools and Software Programs	16
7. 5. 1.4 Post -Delivery Support	16
7.5.2 Validation of Processes for Production and Service Provision	16
7.5.3 Identification and Traceability	16
7.5.4 Customer Property.....	17
7.6 Control of Monitoring and Measuring Equipment	17

8. Measurement, Analysis & Improvement.....	17
8.1 General.....	17
8.2 Monitoring and Measurement of Product	17
8.2.1 Monitoring of supplier performance	18
8.2.2 Internal Audit	18
8.3 Control of Non-Conforming Product.....	18
8.4 Analysis of Data.....	19
8.5 Improvement	19
8.5.1 Continual Improvement.....	19
8.5.2 Corrective & Preventative Action	19
9 Supplier Documentation Requirements	19
10 Gardner Aerospace Supply Chain Portal.....	21
11 Calibration Requirements	21

Revision Summary

Revision	Date	Amended by	Details of amendment
1	12/9/14	M.Rae	New Document
2	12/8/15	M.Rae	Revision to section 3 including update of customer specific requirements.
3	23/10/17	M.Rae	Amended content to include AS9100 Rev D requirements
4	18/1/17	M.Rae	Update to digital data requirements listed under Triumph purchase requirements
5	24/4/18	M.Rae	Creation of Section 11
6	18/9/19	D Hardie	Incorporation of GACL requirements and general update

1.0 Introduction

This document details the quality requirements for suppliers delivering items against Gardner Aerospace purchase orders. The aim of this document is to ensure that all suppliers into Gardner Aerospace understand the required Quality conditions and to ensure that all suppliers are aware of Gardner, and their customers, requirements.

The quality requirements include the supplier's process of procurement, planning, manufacturing, inspection and testing, storage, packaging and release against Gardner purchase order requirements.

Suppliers shall comply with these requirements in full, and should the supplier be in doubt about whether they can comply with these requirements, they shall notify Gardner Aerospace listing any discrepancies.

In case of any conflict between this document and the commercial terms and conditions listed at www.gardner-aerospace.com/terms, the commercial terms of contract shall take precedence. Suppliers should read this document in conjunction with our commercial terms of purchase to understand all Gardner requirements are being fulfilled.

2.0 Supplier Quality System Requirements

Suppliers into Gardner Aerospace will require varying level of approvals, depending on the product and service they are providing to Gardner Aerospace. The minimum approval requirements for each category are given below. Exceptions to this list may be possible, but only when a Quality Plan is in place between Gardner and the supplier in question to support this exemption.

If a supplier believes they have been asked to provide services in contradiction to the below requirements, they shall contact Gardner Aerospace to advise them of the potential discrepancy.

Should a supplier lose any of their accreditations they shall notify Gardner as soon as possible to ensure the risk to supply can be assessed and mitigated by Gardner.

Product Category	Gardner Order Type (signified by first letters of PO number)	Supplier Service	Minimum Quality system Approval	Remarks
AIRBORNE SERVICES	Production, Sub-Contract	Manufacturer	AS9100 or EN9100	1,2
	Production, Sub-Contract	Special Process provider (i.e anodising, welding)	AS9100 or EN9100 and NADCAP approval for applicable process	1,2,3
	Production , Consumable	Stockist	AS9120 or EN 9120	2,4
NON-AIRBORNE SERVICES	Consumable	Tooling	No Approval requirements	
	Consumable	Calibration	UKAS or ISO17025, or equivalent national/international approval	5
	Consumable	General supplies	No Approval requirements	

- 1) Prime customer approval may be required completed processes, depending on the particular quality clause as per section 3 of this document.
- 2) Items are to be supplied with a certificate of conformity providing evidence of conformity to the order requirements, as per section 9 of this document.
- 3) Gardner internal companies do not require NADCAP approval to complete special process work for other Gardner sites providing that they have prime approval to complete the process.
- 4) Prime customer approval may be required for stockists, depending on the particular quality clause as per section 3 of this document
- 5) All calibration activity completed on behalf of Gardner Aerospace must be completed using equipment that is traceable to national/international measuring standards. See

Section 11 for specific notes regarding acceptance standards for measurement equipment

3.0 Purchase Order Clauses

For all airborne requirements, as defined in Section 2, Gardner Aerospace will list the applicable Quality Clauses against the particular order line on the supplier purchase order. These purchase order clauses are specific to the package of work and the prime customer, and the supplier requirements for each clause are defined below. It may be possible that more than one clause will apply for certain product, and in case of any conflict between the two documents the supplier shall seek clarification from Gardner.

Note that if the purchase order does not specify release conditions to work to, it shall be assumed that the release conditions of the drawing owner shall be applied (i.e Airbus release conditions apply to Airbus drawings, Rolls Royce conditions to Rolls Royce drawings etc).

In addition to the purchase order clause, each purchase order line may include reference to a customer condition of supply, a copy of which will be made available to the supplier by the Gardner purchasing function.

Each purchase order clause listed, and its definition is given below. These are organised in alphabetical order.

Airbus	<p>Supply in accordance with your Airbus approval number.</p> <p>All special processes shall only be completed by approved suppliers listed on the QSPL available at http://www.airbus.com/tools/airbusfor/suppliers/</p> <p>All standard parts and materials must be supplied from approved sources as listed on the Airbus Qualified Parts List, a copy of which is available within the Airbus supplier portal or from Gardner on request. Any products that do not have a listing on the QPL shall be highlighted to Gardner for query with Airbus.</p> <p>Please reference your Airbus approval number on any certificates of conformity released to Gardner.</p> <p>In certain circumstances, suppliers may be approved by Gardner to supply product for use on Airbus contracts without the supplier having direct Airbus approval. This is limited to non special processes as defined in the 'MASTERLIST ME0721033' or for stockists. For stockists approved under this method, the requirements to procure product from the Airbus Qualified Parts List still applies and a quality plan shall be generated between Gardner and the supplier.</p> <p>Retention of records in support of Airbus contracts shall be in accordance with Airbus directive A1001.0.</p>
---------------	---

	All transfer of work packages shall be completed in accordance with AP5176, and notification shall be provided to Gardner Aerospace to initiate this process.
Airbus GRAMS / ASR	As per Airbus clause above, but with the following addition: Items are to be planned, manufactured, inspected and tested in accordance with AP2190 GRAMS (General requirements for Aerostructure and Material suppliers) or A1500 to A1506 (Airbus Supplier Requirements)
Augusta Westland	Supply in accordance with Agusta Westland Supplier Quality requirements for Suppliers (QRS01), a copy of which can be found http://www.agustawestland.com/content/agustawestland-ltd
BAE Systems	Supply in accordance with BAE Systems Aircraft Business Units Quality Management Requirements for Suppliers BAE/AG/QC/SC1
Boeing	This order is subject to certification and inspection by your Quality Assurance Organisation as approved by Boeing D1-4426 http://active.boeing.com/doingbiz/d14426/GetAllProcessors.cfm
Cobham	Process and release in accordance with FRL-QAM-10, a copy of which is available on request from Gardner Aerospace. The release certificate in to Gardner shall confirm compliance with FRL-QAM-10 requirements.
EASA Part 21G	Release in accordance with your EASA Part 21G approval
EASA/FAR Part 145	Release in accordance with your EASA/FAR Part 145 approval (EASA form 1 release with FAA release in remarks box is acceptable if approved in your approved Maintenance Organisation Exposition, otherwise an FAA Form 8130 is required)
GKN Cowes	Supply in accordance with GKN Cowes Supplier Quality Requirements (SQA01), a copy of which is available at https://www.gkncowes.co.uk/store.asp?f= under 'Quality Documents'.
Gulfstream	Release in accordance with the requirements of your Gulfstream approval.
Triumph	Supply in accordance with Triumph Supplier Quality Assurance Requirements (SQAR), a copy of which is available at https://www.triumphsupplysource.com/suppliers/index.php under 'Quality Requirement', or from your Gardner contact. Note that all metallic components are subject to additional hardness & conductivity requirements as per SQR-010.

	Note that all data relating to this project shall be controlled in accordance with SCMP 7.3a, available at the above website address.
Safran	Supply shall be in accordance with Safran document GRP-0087 (Safran requirements to supplier), and G005 (Applicable to Safran Helicopter Engines only)
Rolls Royce	Manufacture in accordance with Sabre requirements, which are available on the Rolls Royce supplier website. Please reference your Rolls-Royce approval number on any certificates of conformity released to Gardner.
Pilatus	Release in accordance with the requirements of your Pilatus approval.

Sections 4- 8 list key clauses that suppliers of airborne products into Gardner Aerospace are expected to comply with. Gardner may choose to audit suppliers against these requirements.

For Non-Airborne suppliers, Sections 4-8 are for information only, however they can be utilised by those suppliers for further information, or to help identify continuous improvement actions.

4.0 Supplier Quality Management Systems

4.1 General Requirements – as per AS9100 standard

The supplier shall ensure that Gardner Aerospace, their customers and regulatory bodies are given full right of access to the suppliers premises, and to any of the suppliers sub-tiers premises, within a reasonable period of notice.

4.2 Documentation Requirements

4.2.1 General

The supplier shall establish, document and maintain a Quality Management System - QMS in accordance with the latest revision of the AS/EN 9100 standard as requested in section 2 of this document.

4.2.2 Quality Manual

The supplier shall prepare a quality manual covering the requirements of AS9100, including any specific variations listed within this document. The quality manual shall include or make reference to the quality system procedures and outline the structure of the documentation used in the quality system.

The supplier shall:

- a) Prepare documented procedures consistent with the requirements of AS9100 and this Manual
- b) Effectively implement the quality system and its documented procedures.

The range and detail of the procedures that form part of the quality system shall be dependent upon the complexity of the work, the methods used, and the competence needed by personnel involved in carrying out the activity.

4.2.3 Control of Documents

Suppliers shall be fully responsible for the safe custody of all drawings, instructions and specifications supplied by Gardner Aerospace. The supplier shall ensure revision levels of drawings, specifications, operation sheets and technical plans are as stated on the Purchase Order. Any discrepancies shall be resolved with the Gardner Aerospace Purchasing department prior to commencing work. The supplier shall ensure that only the relevant issue levels of documents are readily available for personnel at required work areas. Supplier shall not use or disclose to third parties any customer and or Government design data without prior authorisation of Gardner Aerospace. **NOTE: Some sites do not call up drawing or specification revisions on purchase orders unless the required revision is not the current one. In this case the latest revision of specification or drawing supplied shall be used.**

4.2.4 Control of Records

Supplier shall establish a documented procedure to define the controls needed for the identification, storage, protection, retrieval, retention and disposition of records. Suppliers shall meet any specific records requirements specified by purchase order or by the terms of the relevant prime customer approval.

No records shall be destroyed without written permission from Gardner Aerospace. Retention periods begin upon shipment of the item specified in the Purchase Order to Gardner Aerospace.

Quality records shall be legible, identifiable to product involved and be stored and maintained in such a way that they are readily retrievable. Originals of documents shall be retained in an area that meets all local fire and life safety codes.

Sub-Tier Supplier quality records shall be maintained in the same manner, and suppliers shall flow down requirements to their sub-tiers as required.

Quality records shall be available for viewing by Gardner Aerospace and regulatory authorities upon request.

5. Management Responsibility

The Supplier's management is responsible for providing and maintaining resources to the extent necessary to comply with the Gardner Aerospace purchase order requirements. Suppliers shall provide training to their employees to the extent necessary in order to carry out and meet Gardner Aerospace and its customer's requirements. Training shall include interpretation of Gardner specific requirements including the requirements of this document. The Supplier's management shall be focussed on customer satisfaction with emphasis on the key performance activities of on time delivery, zero quality defects, continuous improvement and risk management.

The supplier's management is responsible for ensuring that all employees within their organisation are aware of the following:

- Their contribution to product or service conformity
- Their contribution to product safety
- The importance of ethical behaviour.

6. Resource Management

The Supplier's management is responsible for providing and maintaining resources to the extent necessary to comply with Gardner Aerospace requirements. This shall include, but is not limited to, training of the supplier's employees to meet purchase order requirements for any identified special processes, quality inspection, test functions and ITARs compliance.

Supplier management shall focus on customer satisfaction and continuous process improvement.

The supplier shall ensure that personnel performing tasks on behalf of Gardner Aerospace are competent on the basis of appropriate education, training or experience and the supplier shall retain associated records.

A skills matrix is suggested by Gardner as a means for suppliers to identify skill sets within the business, and to identify potential further training requirements to ensure adequate coverage of key skill requirements.

7. Product Realisation

7.1 Planning of Product Realisation

1) All manufacturing and process operations needed for product realization should be planned by the supplier.

If Gardner specifies that a process must be completed to a specific customer specification, the supplier shall comply with that specification, and any invoked specifications, unless otherwise agreed by prior arrangement with Gardner Aerospace.

Gardner aerospace may use certain suffixes to a part number to identify the condition of parts to be supplied into Gardner. Some of these are defined below:

Part Suffix	Definition
<p style="text-align: center;">PF (i.e L57551234200PF)</p>	<p>Part Finished- Supplier is to provide the items less any surface treatments (Surface treatments include NDT processes), however mechanical tests related to prior processes (i.e heat treatment verification activities) must be completed by the supplier prior to supply into Gardner Aerospace.</p> <p>Applicable to Gardner Basildon purchase orders only, note that PF can alternatively mean that items are to be supplied treated, but less assembly. This shall be specified in the relevant contractual documentation if applicable.</p>
<p>LT (i.e L57551234200LT)</p>	<p>Less Treatments- Supplier is to provide the items less any surface treatments (Surface treatments include NDT processes), however mechanical tests related to prior processes (i.e heat treatment verification activities) must be completed by the supplier prior to supply in to Gardner Aerospace.</p>

NOTE: Variations to these descriptions may be agreed for individual parts or specific sites in which case the purchase order or condition of supply shall describe these individual variations.

The manufacturing plan generated by the supplier shall address the manufacturing sequence and identify the inspection verification points, including key characteristics and/or critical to quality characteristics, and process controls selected by suppliers or identified by Gardner. The plan shall also include, as applicable all characteristics which are not verifiable upon receipt have been adequately controlled and verified.

2) The plan shall, where the manufacturing process requires the use of consumable items, i.e. weld wire, braze alloy etc. ensure that traceability of the consumable has been recorded and maintained.

3) Subsequent to the acceptance of technical plans, prototypes or samples by Gardner or its customers, the supplier shall not make any change to plans to produce acceptable product without first obtaining the written consent of Gardner.

4) Software Quality Control shall be established for software (i.e., CNC programs) related to the design, fabrication, inspection and/or test of deliverable articles to Gardner.

5) The supplier shall establish and maintain documented procedures for final inspections, testing activities and any in process inspection deemed necessary in order to verify that the specific requirements for finished product are met. The supplier shall work within, and inspect to tolerances and limitations specified on the drawings. Final inspection shall include verification of acceptance of all previous inspection activities. All inspection and testing operations must be done by authorized personnel.

6) Sampling inspection shall only be used providing that it is based on known statistical standards, or is based on internal studies of process performance. In the absence of such statistical analysis, parts shall be 100% inspected.

7) Purchase orders may be subject to source inspection at suppliers or sub tiers facility, and this will be communicated in the purchase order requirements.

8) First Article Inspection: The requirements for First Article Inspection (FAI) are provided in Section 7.5.1.1. Again, Gardner may choose to complete source inspection at the First Article stage.

9) The supplier shall maintain appropriate inspection and test records to substantiate conformance or non-conformance to the specified requirements. The quality status must be easily identifiable during all stages of manufacture. All quality and environmental records shall be legible and identifiable to the product involved. All records maintained at the suppliers facility must be made available to the purchaser as and when requested. Record retention shall be as defined in Section 4.

10) Where required by specification, or as requested on Gardner purchase orders, suppliers shall provide test specimens with deliveries of parts to allow for approval or test by Gardner Aerospace.

7. 1. 1 Project Management

The supplier shall employ a project management approach to the management of products based on product and organization as appropriate. Supplier shall select the life cycle phases (such as concept, design, planning, execution and closing of the project) processes, tools and techniques that appropriately fit to meet project requirements.

Managing a project includes, but is not limited to:

- Identifying and adhering to customer requirements
- Establish clear and achievable objectives
- Balancing the competing demands for quality, scope, time, and cost

The supplier shall adapt a project management culture and structure (project manager, project team, as appropriate) to deal with scheduled constraints, mitigate risk, manage resources to successfully achieve goals and objectives.

7. 1.2 Risk Management

The supplier shall establish, implement and maintain a process for managing risk to meet the requirements specified on Gardner Aerospace purchase orders. Risks that may affect delivery, cost or quality shall be identified prior to the supplier's commitment to supply product to Gardner Aerospace.

Tools such as FMEA, Process flows and control plans shall be considered for use in the risk analysis of product manufacture, and the use of these tools (or equivalent) is mandatory when Airbus GRAMS or ASR requirements are specified as per section 3 of this document.

7.1.3 Configuration Management

Suppliers shall maintain a configuration management system to ensure the requirements of Gardner Aerospace purchase orders are met. Suppliers shall have a defined process to review and incorporate drawings, specifications and supplemental instructions and changes to the extent necessary to ensure that only documents of the revision specified in the Gardner Aerospace purchase order are used

If the purchase order does not specify the issue number of drawings/condition of supply to be used, Gardner shall have issued these to the supplier separately, and the supplier shall assume that these documents shall remain at the same issue status until Gardner Aerospace notifies the supplier otherwise through a condition of supply change request (COSCR). This requirement only applies to drawing/condition of supply data, and does not absolve the supplier of the requirement to ensure they are working to the latest copy of manufacturing specifications. The supplier shall always work to the latest manufacturing specifications,

unless otherwise specified on the purchase order, and the supplier shall have a process for reviewing the manufacturing specifications to ensure they are working to the latest issue.

7.1.4 Supplier Driven Changes/ Work Transfers

Suppliers undertaking any industrial change or transfer of work that may have impact upon deliveries into Gardner Aerospace shall notify Gardner Aerospace of their intention to instigate the change prior to commencement of transfer. The supplier shall present full details of the transfer, including a risk analysis and time plan for the change. Suppliers are required to provide Gardner Aerospace 3 month's formal written notice prior to initialisation of the transfer to allow Gardner Aerospace to approve the transfer and dedicate the necessary resource to monitor project and to continually assess the risks involved.

Gardner may have to provide notification to their customer of any work transfers being completed, and any specific requirements required by any customers of Gardner will be flown down to the supplier at the relevant time.

7.2 Customer-related Processes

7.2.1 Requirements Related to the Product

The supplier shall review requirements required by Gardner Aerospace purchase orders to meet product requirements. The supplier shall ensure they comply with all requirements of the purchase order, and of this document, with particular attention being paid to the quality clauses stated on the purchase order and defined within section 2 of this document.

Gardner Aerospace shall provide the supplier with a condition of supply requirement to allow the supplier to determine the supply requirements into Gardner Aerospace. This condition of supply will detail any deviations from the standard drawing condition that Gardner required. If no condition of supply has been provided the supplier shall assume that Gardner Aerospace require the parts to be manufactured fully to drawing requirements, noting the requirements in section 7.1 of this document.

Should the supplier identify that they cannot comply with the requirements of the Gardner Aerospace purchase order, they shall notify Gardner Aerospace as soon as possible.

For suppliers with a contract purchase order in place, the supplier can review the Gardner Aerospace supply chain portal to determine future order forecasting.

7.4 Purchasing

Supplier purchasing processes shall be in accordance with 8.4 of AS/EN9100, with the following points to be noted:

Suppliers shall ensure that the requirements of this document dictating the minimum quality system requirements are flown down to their own sub-tier suppliers, with particular attention being paid to the quality clause requirements as defined in section 2 of this document.

Suppliers shall flow down the transfer of work process as defined in 7.1.4 of this document to their own sub-tier suppliers to ensure Gardner Aerospace are fully aware of any potential impacts within the supply chain that may affect delivery in to Gardner Aerospace.

Suppliers shall ensure they flow down the requirement to allow right of access by Gardner Aerospace, our customer, and regulatory authorities to the applicable areas of all facilities within the supply chain.

Suppliers shall request First Article Inspection Reports from all their sub-tiers on commencement of new product introduction or a change in supply process, and these shall be presented to Gardner Aerospace for approval.

Suppliers into Gardner Aerospace plan, implement, and control processes, appropriate to the organization and the product, for the prevention of counterfeit or suspect counterfeit part use and their inclusion in product(s) delivered to Gardner.

7.5 Production and Service Provision

7.5. 1 Control of Production and Service Provision

As per AS9100

7.5.1.1 Production Process Verification

When requested by purchase order, or for first time manufacture of airborne products, the supplier shall perform and submit a report on first article inspection (FAI) in conformance with SAE AS9102 to the drawing revision stated on the purchase order/condition of supply. If a supplier has previously completed a First Article for a different customer that matches the new item being supplied in to Gardner, then the original FAIR can be used provided that a new FAIR cover sheet is presented that links the batch of the first delivery in to Gardner with the original FAIR report.

All First Article Reports shall be submitted with the first delivery into Gardner, and the supplier CofC shall be annotated with the relevant FAI report number. No further deliveries, after the FAIR delivery, are permitted by the supplier until they have received authorisation from Gardner that the FAIR has been approved and accepted.

The supplier shall perform and submit a full first article inspection (FAI), or a partial (delta) FAI for affected characteristics, when any of the following events occurs:

- A change in the drawing revision (e.g. Drawing, Parts List, CAD Models, Engineering Changes, Specification Changes, etc.)
- Any of the following changes that can potentially affect fit, form or function
 - 1) Manufacturing source(s) - Use of new forging, casting, swaging supplier, or use of new processing house, that accounts for the creation of design characteristics.
 - 2) Process(s) - Any method that effects the generation of design characteristics. This includes routing (Routers) sequence, methods of machining, or assembly and test.
 - 3) Inspection method(s) - Gauges designated by supplier to accept design characteristics features have been changed.
 - 4) Location of manufacture - Product is no longer manufactured in its entirety at supplier facility.
 - 5) Tooling - Supplier designed fixture that holds the part during inspection has been modified, added, removed.
 - 6) Materials - Part is manufactured and/or processed from an optional material type than the one called out on the engineering drawing.
 - 7) A change in numerical control program or translation to another media
 - 8) Movement of machinery to another location of the supplier's facility.
 - 9) A lapse in production for two years since the last production date

7.5.1.2 Control of Production Process Changes

Changes shall be limited to approved personnel within the business, and note shall be taken of point 7.5.1.1 to determine if a FAIR is required on completion of the change.

Any major changes to the production process will require notification to Gardner as per section 7.1.4.

The supplier shall have a process for managing change requests from Gardner Aerospace, to ensure that changes are implemented as part of a planned process and that all elements have been reviewed and implemented by the supplier.

7.5.1.3 Control of Production Equipment, Tools and Software Programs

All equipment, tools and software shall be validated at the FAIR stage prior to commencement of serial production as per 7.5.1.1.

Suppliers shall have a process in place to monitor the condition of Gardner supplied tooling/equipment on a regular basis to ensure that items remain in a serviceable condition. If a tool is worn or damaged, then Gardner shall be contacted to determine corrective actions to be taken. The supplier is responsible for the routine calibration of this Gardner supplied tooling/equipment in line with the supplier's calibration system requirements.

A preventative maintenance plan shall be in place at the supplier, based on a risk analysis to determine potential high impact or high probability breakdowns, to ensure that equipment remains available and serviceable to meet Gardner Aerospace delivery requirements. In the case of a supplier not having duplicate capability in critical areas of production, the supplier shall have a mitigation plan in place to support Gardner delivery requirements in case of long-term breakdown.

7.5.1.4 Post -Delivery Support

As per AS9100 requirements

7.5.2 Validation of Processes for Production and Service Provision

As per AS9100, taking note of the specific quality clauses related to the contract being manufactured, as detailed in section 2 & 3 of this document.

7.5.3 Identification and Traceability

As per AS9100, with the following additional points:

- For sub-contract processes, the supplier shall identify the Gardner batch number on their internal shop traveller or have a method for linking the Gardner batch number to their own internal traceable number. Sub-contract suppliers shall always reference the Gardner batch number on their release paperwork back to Gardner.
- All items being delivered into Gardner shall be marked with either permanent markings in line with drawing requirements, or labelled, such that Gardner can match the batch traceable details on the supplier CofC to the received parts during the goods in process.

7.5.4 Customer Property

The supplier shall take care with Gardner supplied property and shall assume responsibility for any loss, damage or destruction while it is under the supplier's control or being used by the supplier.

Any materials free issued to a supplier for furtherance of a Gardner order shall only be utilised on Gardner product. Suppliers shall maintain traceable records of all free issued items for potential future audit by Gardner Aerospace. The supplier must maintain identity of all surplus material and tooling for return to the purchaser at the end of the contract unless otherwise directed by the purchaser.

Suppliers shall have a process in place to monitor the condition of Gardner supplied tooling/equipment on a regular basis to ensure that items remain in a serviceable condition. If a tool is worn or damaged, then Gardner shall be contacted to determine corrective actions to be taken. The supplier is responsible for the routine calibration of this Gardner supplied tooling/equipment in line with the supplier's calibration system requirements.

7.5.5 Preservation of Product

As per AS9100, with the following points:

- Suppliers shall have a process to eliminate Foreign Object Debris (FOD) from their products, and from their deliveries into Gardner Aerospace.
- Any materials being shipped to Gardner that have a shelf life shall have the shelf life clearly labelled on the incoming goods and on the incoming paperwork so that Gardner can identify the shelf life window. Goods shall not be supplied with a shelf life lower than 6 months without prior approval from Gardner Aerospace.
- Parts being supplied to Gardner shall be packaged sufficiently to avoid any damage during transit. All bare metal components being shipped into Gardner shall be suitably protected from corrosion through the use of temporary protection methods applicable to the contract as defined in section 3 of this document.

7.6 Control of Monitoring and Measuring Equipment

As per AS9100

8. Measurement, Analysis & Improvement

8.1 General

As per AS9100, with the following points:

- Suppliers completing packages under Airbus GRAMS or ASR requirements, as defined in section 3 of this document, are required to complete Failure Mode Effect Analysis (FMEA) to identify key risks to the programme being supplied to Gardner and to identify any key characteristics for the process. Suppliers shall implement a control plan to monitor any key risk areas during the product lifecycle.

8.2 Monitoring and Measurement of Product

8.2.1 Monitoring of supplier performance

Gardner Aerospace use the Gardner Aerospace supplier portal to monitor supplier performance. The supplier portal automatically updates with information from the Gardner MRP system based on supplier deliveries and returns logged within the MRP systems.

Suppliers shall have access to the Gardner Aerospace Supply Chain portal where they can review their delivery and quality performance into Gardner Aerospace. The data held on this system may be used by Gardner for future supplier selection, and so it is essential that suppliers review this data and question any performance metrics which they do not feel accurately represents the supplier's performance.

Gardner Aerospace may, based on the performance indicators listed in the Gardner Aerospace Supply Chain portal, request an improvement plan from a supplier on Quality or Delivery issues. Failure of a supplier to respond to a performance improvement request, may result in the supplier being de-selected from the Gardner Aerospace approved supplier listing.

For access queries to the Gardner Aerospace Supply Chain portal, please contact your local Gardner purchasing officer.

Access to the portal is available at <https://gardner.valuechain.com>

8.2.2 Internal Audit

As per AS9100

8.3 Control of Non-Conforming Product

As per AS9100 but with the following points:

- When a supplier identifies product received from Gardner Aerospace that is in a non-conforming state, the supplier shall notify Gardner immediately for disposition.
- When Gardner identifies product received from a supplier that is non-conforming, it shall reject any items back to the supplier for review/re-work. These rejections shall appear on the Gardner Aerospace Supply Chain portal, where suppliers are required to provide actions they have taken to contain, identify the cause, and to prevent the non-conformance recurring. For further information on the Gardner Aerospace Supply Chain portal, please see section 10 of this document.
- When a supplier produces scrap material from Gardner supplied product, the supplier shall notify Gardner Aerospace prior to scrapping of any product to ensure that it is correctly accounted for on the Gardner system.
- When a supplier produces a non-conformance that they believe will be acceptable under a concession, this concession shall be applied for in writing to the Gardner Aerospace quality department. All concessions shall be closed prior to shipment of the product into Gardner. Gardner Aerospace reserves the right to pass on any costs relating to concession application from their customer to the supplier at fault for the original non-conformance
- When a supplier identifies a non-conformity with product after it has been shipped to Gardner Aerospace, a notification of escape shall be made to Gardner Aerospace. This shall be completed in writing and addressed to the relevant Quality Manager of the Gardner Aerospace receiving site. The following information shall be included:

- Part numbers affected
- Delivery dates, release note numbers and batch numbers of product affected
- Details of the root cause of the fault
- Details of the corrective actions taken by the supplier to rectify the fault.

8.4 Analysis of Data

As per AS9100

8.5 Improvement

8.5.1 Continual Improvement

Gardner Aerospace encourages suppliers to have systems in place to promote and implement continuous improvement activities in quality, service, delivery, value, and environmental management. This philosophy should be fully deployed throughout the supplier's organization.

Gardner Aerospace wish to develop a steady and healthy supply chain, and so are willing to engage with suppliers to develop best practices across supplier sites and to share Gardner methods of improvement.

8.5.2 Corrective & Preventative Action

Suppliers shall have a process to implement corrective and preventative actions within their business when non-conformities are identified.

As per section 8.3, suppliers will be requested by Gardner Aerospace via the supply chain portal, to provide details of the actions taken as a result of supplier non-conformities identified at Gardner.

In the case of repeated non-conformities from a supplier, or continued poor performance, Gardner may request an improvement plan from the supplier where the supplier will be expected to identify and implement preventative actions to eliminate poor performance.

If a supplier fails to adequately answer non-conformities being raised by Gardner Aerospace, then the supplier risks being removed from the Gardner Aerospace approved supplier register.

9 Supplier Documentation Requirements

Suppliers shall provide a certificate of conformity with delivery of Goods In to Gardner Aerospace. This certificate of conformity shall contain the following information:

- Part number as per Gardner purchase order
- Part issue number
- Part Description
- Quantity of parts
- Supplier Address
- Gardner purchase order number
- Batch or serial number of delivered product
- Copy of manufacturers certificates for standard parts
- Statement of conformity and reference to the relevant approval numbers to match the quality clauses as given in section 3 of this document.
- Reference to relevant FAIR paperwork if the CofC is accompanying a first delivery.

- Signature from an approved signatory of the supplier
- Details of any applicable concessions, along with a copy of the relevant approved concession paperwork.
- Details of any special processes if applicable.

10 Gardner Aerospace Supply Chain Portal

Gardner Aerospace has an online supply chain portal for communication with suppliers on delivery and quality issues.

Access to this portal is available at <https://gardner.valuechain.com>

Suppliers will require an account to log on to this portal, and suppliers shall contact their Gardner Aerospace purchasing or quality contact to obtain a log on.

The Supply Chain Portal displays delivery and Quality performance for all suppliers in to all Gardner sites, and allows Gardner Aerospace to continually monitor supplier performance. The performance displayed in the portal is determined from deliveries made by the supplier to Gardner against purchase order requirements, and also takes in to account the number of rejections the supplier has received from Gardner. These performance measures could be utilised by Gardner Aerospace for future supplier selection, and so it is essential that suppliers regularly use the portal to ensure all data is collaborated with Gardner contacts to ensure accuracy of the performance figures.

Where forecasting data is available for a product, the supplier shall have access to the forecasting data via the portal.

When a reject part from a supplier is identified within Gardner, a reject will be raised on the portal and the supplier contact will be automatically e-mailed with a request for a corrective action. Supplier contacts are required to log on to the portal to register their responses to each reject, and to detail the actions taken by the supplier to prevent re-occurrence of the non-conformity. If the supplier fails to respond to the corrective action request, the portal will continue to e-mail the supplier contact until a response is received, and the lack of action from the supplier will be recorded against their responsiveness score which is visible to Gardner.

Based on poor supplier performance on delivery or quality, Gardner may request initiation of an improvement plan from suppliers to achieve required targets.

Repeated failure of a supplier to address issues raised by Gardner, and to implement improvements to meet Gardner requirements, may result in the supplier being removed from the Gardner approved supplier list.

11 Calibration Requirements

All calibration activity completed on behalf of Gardner Aerospace must be completed using equipment that is traceable to national/international measuring standards. Acceptance standards shall also be as per a national/international standard. Where no national/international standard exists, are no standard has been specified by Gardner, clarification shall be sought from your Gardner Aerospace contact.

A certificate of calibration shall be provided for each item of equipment which demonstrates this traceability to a national standard.

The following references are given as examples for acceptance standards. Other applicable national standards, depending on worldwide location, may be utilised in place of the standards given below.

Instrument Type	Applicable standards*
Dial Indicators	BS 2795
Verniers	BS887, DIN862, JIS B 7507
Micrometers	BS870, ISO 3611
Height Gauges	BS1643
Surface Plates	BS817
Plain Plug Gauges	BS969
Plain Ring Gauges	BS969
Thread Gauges	BS1580-1, BS919, BS A 345, ISO 3161
Heat Treatment Equipment	AMS2750
Gauge Blocks	ISO3650
Depth Micrometer	BS6468
Bevel Protractor	BS1685
CMM Machines	ISO10360-2
NDT Equipment	Internal Gardner Instruction GA-NDT-002

*Where purchase orders specifically specify different acceptance standards to those listed above, the purchase order or contract requirements shall take precedent. Where multiple standards are listed, any of the applicable standards can be used.