

GOODRICH (Hereafter referred to as "The Company" in this document)			
TITLE	SUPPLIER QUALITY ASSURANCE REQUIREMENTS		
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DESCRIPTIONS OF PRIOR REVISIONS AND APPROVALS ARE MAINTAINED ON FILE			
DESCRIPTION OF CURRENT CHANGES: Updated section 8.0 – to include Nonconventional Machining requirements. Revised QC paragraph 060, 115.5 & 116 to provide more details. Added requirements for Manufacturer certificates to be submitted & Notes on bearing relubrication in QC paragraph 134.			



SUPPLIER QUALITY ASSURANCE REQUIREMENTS – INTERIORS CARGO SYSTEMS

1.0 Unless otherwise specified herein, Supplier Quality Assurance Requirements per ASQR-01 and COL-ASQR-PRO-0003 apply.

2.0 TRACEABILITY

The supplier shall control the unique identification of the product and maintain records for parts where an exclusive manufacturer(s) is specified or where the part is completely defined by an engineering drawing. Traceability for Raw Material used to manufacture parts is also required and records shall be retained. Traceability requirements include:

- The ability to trace all products manufactured from the same batch of raw material, or from the same manufacturing batch, to the destination (e.g., delivery, scrap),
- For an assembly, the ability to trace its components to the assembly and then to the next higher assembly, and
- For a product, a sequential record of its production (manufacture, assembly, inspection/verification) to be retrievable.

Suppliers must provide traceability records at the request of The Company within 48 hours of notification. Traceability shall be established via one of three methods:

Method 1, Cradle to Grave: A certification, purchase order, shipper or equivalent from each institution that took ownership of the parts, starting with manufacturer (or mill in the case of raw material traceability) and ending with supplier. Each certification, purchase order, shipper or equivalent will have a traceable feature (date code, sold to name & address, heat lot #, etc.) that links the subsequent or previous cert to itself.

Method 2, Abridged: A certification or shipper from the original manufacturer that includes a traceable feature (date code, heat lot #, etc.) plus a certification from the supplier that denotes the same lot number being provided.

Method 3, Manufacturer's Authorized Distributor: A certification or shipper from the original manufacturer's authorized distributor. Evidence of a distributor's authorization from the manufacturer shall be provided.

3.0 SUPPLIER DELEGATION PROGRAM

The supplier shall meet the following criteria within an agreed upon time frame (to be documented and monitored IAW WI9301) between the supplier and The Company:

- For High Volume Suppliers (>10,000 pc supplied annually) - Achieve less than or equal to 1500 defects per million (Average) for the previous six months
- For Low Volume Suppliers (<10,000 pc supplied annually) – Achieve less than or equal to 5 escapes for the previous six months
- Have an established business relationship with The Company for greater than 6 months and have received at least 20 different shipments.
- Evidence of AS9100 Compliance via on-site audit or registered and listed on the IAQG Oasis database
- Close any audit findings from on-site Process Audit

If the supplier has met these conditions and is recommended by the commodity team for delegation, a formal notification will be sent to the supplier notifying them of the status change. After First Article Inspection requirements are met, as applicable, and unless otherwise notified, delegated suppliers will retain all certifications and test reports required by the purchase order except for a Certificate of Conformance per paragraph 116. Suppliers must provide certifications at the request of The Company within 48 hours of notification. If supplier cannot demonstrate compliance to the 48 hour request requirement, supplier may be subject to delegation removal and have to submit a full cert packet with every shipment.

If at the end of the agreed upon time frame the supplier has not met the above criteria, The Company may require the supplier to pay for source inspection until the criteria has been met. The Company reserves the right to remove a supplier from Delegation due to supplier quality performance degradation and/or due to increased risk.

4.0 NONCONFORMING PRODUCT AND CORRECTIVE ACTION

Supplier product that does not meet engineering drawing and/or purchase order requirements shall be communicated to The Company prior to product shipment per Company document WI3320. Supplier product discovered after shipment by the supplier to be nonconforming to any engineering drawing and/or purchase order requirement shall be immediately disclosed to The Company upon discovery. The notification shall be submitted on NOPQE Form: ASQR-01 Form 6. Refer COL-ASQR-PRO-0003 for further information on the handling of nonconforming product. Suppliers that receive notification of Nonconforming product from The Company shall perform and maintain internal corrective action and make available for The Company review upon request.

- The supplier will be notified if formal corrective action is required to be submitted to The Company.
 - Immediate containment shall be submitted to The Company within 5 business days. Containment actions shall be submitted on form COL-FRM-0055.
 - The complete RCCA response shall be submitted within 10 business days of issue or sooner depending on customer requirements.
 - Extensions will only be granted if requested prior to the due date of the corrective action. Corrective Action submittals must be submitted on form COL-FRM-0054.
- Requests for a Return Authorization number shall be satisfied within 48 hours. If an RMA# is not provided in 48 hours, the buyer will assign the QN# as the RMA # and return the product to the supplier. If the product is dispositioned as scrap by The Company, but the material is shipped back to the supplier on a miscellaneous shipper for analysis, the supplier shall control the product until physically rendered unusable (i.e. the product is not allowed to be reworked and sent back to The Company as production units).
- Grief notices, (i.e. errors with paperwork), are considered escapes. Each paperwork escape will count as one escape and a one piece rejection against your quality score. All paperwork issues shall be resolved within 1 business day.

5.0 SUPPLIER CONTROL OF ENGINEERING DATASETS

Suppliers to The Company who receive CAD/CAM/CAI/CAE datasets from The Company representing released drawings or part geometry generated by Boeing shall be compliant to D6-51991. The supplier must be approved by The Company prior to receipt of this data. The Company reserves the right to survey and / or review the DPD quality assurance management systems of these suppliers (IAW MP2027) annually. Suppliers to The Company who receive CAD/CAM/CAI/CAE datasets from The Company representing released drawings or part geometry generated by The Company shall be compliant to the configuration management requirements of AS9100.

6.0 DESIGN AUTHORITY

The Company's released drawings and "Attachment ERN's" represent the approved design configuration and is the design authority unless stated otherwise. If there are any discrepancies found between the drawing and any other media, such as CAD Models or direct drawing change ERN's, the drawing is the authority.

7.0 SPECIFICATION REVISIONS

Unless otherwise specified on the drawing or Configuration Control Sheet, the latest specification revision in effect at the time the lot of raw material/parts was originally manufactured or processed shall apply. See ASQR-01 section 4.1.10 for additional information. In the event a document has been superseded, the latest revision of the superseding document shall apply, except for product in which the company does not have design authority (see note below for Boeing D14426). For a supersession listing and a reference list of current revisions of the Company specific documents, reference the Specification Revision Levels folder on Livelink. All changes to specifications shall be implemented within six months of the specification issue date. The Company will provide a copy of all Company or Customer specific documentation via Livelink. All Industry or Military specifications are to be procured by the supplier.

**Note: In the event of a cancellation and/or supersession of an Industry or Government standard, the latest revision of the cancelled specification shall apply until Boeing Engineering accepts the replacement specification within D14426. Reference D14426 prior to manufacturing.

8.0 STANDARD SHOP PRACTICES AND MATERIAL / PART SUBSTITUTIONS

Unless otherwise specified on the drawing, Standard shop practices IAW PS2025 shall apply to all legacy drawings regardless of callout/linkage through the title block. Legacy drawings include, but are not limited to Western Gear, Lucas, TRW & Goodrich.

Material and part substitutions are not allowed unless specifically allowed on the drawing or through reference to PS2025 located in the drawing title block.

Nonconventional machining techniques not specifically allowed by the engineering drawing are prohibited. As defined by PS2025, Nonconventional Machining includes the following processes but are not limited, refer PS2025 definition on Nonconventional Machining.

- Electrochemical Machining (ECM)
- Electrochemical Grinding (ECG)
- Electrical Discharge Machining (EDM) – Fast Hole, Sinker, Wire
- Laser Beam Machining (LBM) – Cutting, Drilling, Marking
- Abrasive Water Jet Cutting (WJC)

9.0 NEW MATERIAL

The supplier shall fulfill all purchasing agreements to The Company with supplies that are in a new / unused condition. Supplies previously returned from another customer are not allowed. For distributors, this includes re-stocked items. No re-stocked or broker procured items are allowed.

- New – Made from previously unused components, whether manufactured from virgin material, recovered or refined material in the form of raw material, or materials and by-products generated from and reused within, an original manufacturing process; provided that the supplies meet contract requirements.
- Virgin Material – Previously unused raw material, including all metallic alloys.
- Recovered Material – Waste materials and by-product recovered or diverted from solid waste. This does not include materials and by-product generated from and commonly reused within the original manufacturing process.

10.0 Packaging and Shipping

The supplier shall limit the weight of shipping packages to a maximum weight of 40 lbs when possible. Shipping packages over 40 lbs shall be palletized and labeled as “Heavy”. **See ASQR-01/ASQR-15.1 for additional requirements for product preservation and delivery.**

11.0 The following special quality requirements are selective, and if applicable, their paragraph number will appear on the configuration control sheet attached to the purchase order.

010. **Removed.**

011. **Variation Management of Key Characteristics**

The supplier shall meet the requirements of AS9103 and COL-ASQR-PRO-0003 to develop and monitor a process to meet variation management requirements for Key Characteristics. Records pertinent to such shall be available for review and delivery to The Company upon request.

050. **Removed.**

060. **First Article Inspection.**

The supplier shall submit a First Article Inspection report that conforms to AS9102 requirements on the first production run of product. See SJ1077-1 for detailed instructions. Additional first articles or partial/delta first articles will also be required in the event of a change per AS9102, ASQR-01 and COL-ASQR-PRO-0003. See each document for a list of changes requiring first article validation.

The supplier should, when practical, clearly identify (mark/tag – non-permanent) the product used to develop the FAI. All certifications and test reports required by the PO and/or drawing(s) shall be submitted with the FAI package which includes a copy of the assembly, sub-assembly, and detail FAI reports as applicable. The supplier shall flow down the requirements of AS9102 to their sub-tier suppliers.

070. **Removed.**

080. **Removed.**



- 090. **Registered Components (Critical Items)**
Your firm has been subcontracted to supply The Company with Registered Components/Critical Items. Based on this, your firm is required to document in detail the critical methods and processing that will be used and to submit to The Company for analysis and approval the information pertaining to the following:
 - A. The methods and the type of critical processing to be used (subject to limitations imposed because of proprietary information).
 - B. The locations within the processing cycle where inspections, audits, or walk through will take place.
 - C. The attributes of the product, which will be inspected at each inspection point.
 - D. The materials and methods of preservation and packaging to be used to protect the product.
 - E. The handling and transportation precautions necessary to protect the product.[Note: Any revision or variation made by the supplier after initial approval by The Company to any of the above listed controls shall not take place until The Company has approved the change.]
- 100. **Penetrant Inspection**
Penetrant inspect all parts per applicable engineering drawing requirement. A copy of the certified inspection report shall be submitted with the shipment. This certificate must contain reference to the specification and revision to which the processing conformed and the name of the agency that performed the processing. Traceability from the certification to the material submitted is required and shall be retained.
- 100.1 **Penetrant Inspection - Boeing**
Penetrant inspect all parts per applicable engineering drawing requirement. Use Boeing approved source per D1-4426. A copy of the certified inspection report shall be submitted with the shipment. This certificate must contain reference to the specification and revision to which the processing conformed and the name of the agency that performed the processing. Traceability from the certification to the material submitted is required and shall be retained.
- 100.2 **Removed.**
- 101. **Magnetic Particle Inspection**
Magnetic particle inspect all parts per applicable engineering drawing requirement. A copy of the certified inspection report shall be submitted with the shipment. This certificate must contain reference to the specification and revision to which the processing conformed and the name of the agency that performed the processing. Traceability from the certification to the material submitted is required and shall be retained.
- 101.1 **Magnetic Particle Inspection - Boeing**
Magnetic particle inspect all parts per applicable engineering drawing requirement. Use Boeing approved source per D1-4426. A copy of the certified inspection report shall be submitted with the shipment. This certificate must contain reference to the specification and revision to which the processing conformed and the name of the agency that performed the processing. Traceability from the certification to the material submitted is required and shall be retained.
- 101.2 **Removed.**
- 102. **Certification of X-Ray**
All parts requiring radiographic certification shall be processed in accordance with applicable specifications and standards. A copy of the certified inspection report shall be submitted with the shipment. This certificate must contain reference to the specification and revision to which the processing conformed and the name of the agency that performed the processing. Traceability from the certification to the material submitted is required and shall be retained. The supplier shall retain X-Ray films for a minimum of one year.
- 102.1 **Certification of X-Ray - Boeing**
All parts requiring radiographic certification shall be processed in accordance with applicable specifications and standards and must be performed by a Boeing approved source per D1-4426. A copy of the certified inspection report shall be submitted with the shipment. This certificate must contain reference to the specification and revision to which the processing conformed and the name of the agency that performed the processing. Traceability from the certification to the material submitted is required and shall be retained. The supplier shall retain X-Ray films for a minimum of one year.
- 103. **Removed.**
- 103.1 **Removed.**



- 104. **Ultrasonic Inspection**
Ultrasonic inspect parts or material per applicable engineering drawing requirements. A copy of the certified inspection report shall be submitted with the shipment. This certificate must contain reference to the specification and revision to which the processing conformed and the name of the agency that performed the processing. Traceability from the certification to the material submitted is required and shall be retained.
- 104.1 **Ultrasonic Inspection - Boeing**
Ultrasonic inspect parts or material per applicable engineering drawing requirements. Use Boeing approved sources as required per D1-4426. A copy of the certified inspection report shall be submitted with the shipment. This certificate must contain reference to the specification and revision to which the processing conformed and the name of the agency that performed the processing. Traceability from the certification to the material submitted is required and shall be retained.
- 106. **Heat Treatment**
A copy of the certified inspection report shall be submitted with the shipment assuring conformance to the applicable heat treat requirement. This certificate must contain reference to the specification and revision to which the processing conformed, the condition to which the item was processed, and the name of the agency that performed the processing. Traceability from the certification to the material submitted is required and shall be retained. All test results, including but not limited to hardness and conductivity, as required by applicable process specifications shall be reported.
- 106.1 **Heat Treatment – Boeing**
Heat treatment must be accomplished by an approved source as listed in D1-4426. A copy of the certified inspection report shall be submitted with the shipment assuring conformance to the applicable heat treatment requirement. This certificate must contain reference to the specification and revision to which the processing conformed, the condition to which the item was processed, and the name of the agency that performed the processing. Traceability from the certification to the material submitted is required and shall be retained. All test results, including but not limited to hardness and conductivity as required by applicable process specifications shall be documented. Hardness testing is required on a per part basis and inspection reports must verify that 100% of parts have been tested. Note: if multiple parts are produced from a single piece of raw material, each part must be individually tested for hardness.
- 106.2 **Removed.**
- 106.3 **Heat Treat Sampling Authorization for AMS2759**
The supplier may use sampling for hardness testing after final operation when AMS 2759 is required using general inspection level II per ANSI/ASQC Z1.4 to determine sample size. Note: Acceptance number in all cases is 0.
- 106.4 **Heat Treat Sampling Authorization for AMS2770**
The supplier may test random samples of each lot for both hardness and conductivity testing after final operation when AMS 2770 is required using a frequency that shall not be less than 25% random sample of each lot. Note: Acceptance number in all cases is 0.
- 107. **Chemical Test Report - See QC paragraph 133**
- 108. **Mechanical/Physical Test Report - See QC paragraph 133**
- 109. - 111 **Removed.**
- 112. **Functional Test Report**
A copy of the functional test report shall be submitted with the shipment of actual test results. Traceability from the test report to the material submitted is required and shall be retained. These reports must assure conformance to specified requirements.
- 113. **Identification Marking - General**
Each part or article submitted for acceptance shall be properly identified per applicable standard. If no standard is specified, refer to PS2018 Code E for part mark requirements. For multiple revision drawings, the part revision shall be the revision listed first on the Configuration Control Sheet. For raw materials, each part or article shall include the part number as listed on the Configuration Control Sheet.
- 113.1 **Identification Marking - Boeing**
Each part or article submitted for acceptance shall be properly identified per BAC 5307 or DPS 3.02, as applicable.



- 114. **Shelf Life Identification**
All material shall have at least ½ the shelf life remaining on the product at time of receipt. Unless otherwise specified in the material specification or purchase order, each container shall be identified to include at a minimum:
 - Manufacturer Name
 - Compound & Specification Number (if applicable)
 - Batch Number assigned by manufacturer
 - Expiration Date
 - Storage Temp Requirements (if applicable)
- 115. **Special Processes/ Raw Material - Boeing**
All raw material (foreign sources specifically) or special processing requirements whether to be fulfilled by the supplier or by a subcontractor to the supplier must be fulfilled by an approved source as defined in D1-4426. In addition, all special processes as listed in ASQR-01 and COL-ASQR-PRO-0003, with the exception of Conventional Machining, Non-Metallic Manufacturing and Non-Metallic Material Testing, must also be fulfilled by NADCAP certified processors. Meaning the special processing source must be Boeing and NADCAP certified. Note: Chemical Processing includes PAINT, PRIMER AND PASSIVATION. For NADCAP information, including certified processors, access the PRI Home Page (<http://www.pri-network.org>), click on “NADCAP”.
- 115.2 **Removed.**
- 115.5 **Special Processes - The Company**
All special processes as listed in ASQR-01 and COL-ASQR-PRO-0003 must be fulfilled by NADCAP certified processors, with the exception of Composites, Conventional Machining, Electronics (Bare boards, circuit card assemblies, cable and wire harness), Non-Metallic Material Manufacturing and Non-Metallic Material Testing.
Note: Chemical Processing includes PAINT, PRIMER AND PASSIVATION. For NADCAP information, including certified processors, access the PRI Home Page (<http://www.pri-network.org>), click on “NADCAP”.
- 116. **Statement of Conformance**
Each shipment must be accompanied by one legible copy of a statement of conformance. This statement shall specify that all contractual requirements have been adhered to including all specifications and other applicable documents as cited in the purchase agreement and that evidence is on file for review by a The Company quality representative. The statement of conformance must contain as a minimum: the part number, purchase order number, quantity, revision as specified on the purchase order configuration control sheet (include Parts lists, TRIP's, PSDL's, ADBL's, etc. with revisions, When drawings have only one sheet, the revision may be stated without stating sheet number, i.e. “Sht1-A” may be stated as “A”, “Sht1-C” may be stated as “C”, etc.), name and address of the company certifying the part. Also include VMRR # when applicable. For assemblies, only the upper level part number and revision is required on the Statement of Conformance. If the CCS states to purchase to the latest revision of manufacturer's spec, a revision is not required on the CofC. However, commercial off the shelf items that are produced to a standard (e.g., NAS, MS, BAC, etc.) shall include the revision on the CofC.
- 117. **Removed.**
- 118. **Special Process Certification**
A copy of the certified inspection report shall be submitted with the shipment that assures conformance to all applicable processing requirements. These certificates must contain reference to the specification and revision to which the processing conformed, the condition to which the material was processed (when applicable), the name and address of the agency that performed the processing. Traceability from the certification to the material submitted is required and shall be retained. All lot test and inspection results as required by applicable process specification shall be reported
- 119. **Removed.**
- 121. **Welding**
A copy of the certified inspection report shall be submitted with the shipment that assures conformance to the welding specification, as required, all applicable specifications contained therein. This certificate must contain reference to the revision to which the welding conforms, the condition in which the item was processed (when applicable), the name of the agency that performed the testing. Traceability from the certification to the material submitted is required and shall be retained. All lot test and inspection



results as required by applicable welding specification shall be reported. When required by specification, all fabricated items shall be marked so as to positively identify it with their approved welding operator. Unless otherwise specified impression stamping is prohibited.

122.-130 **Removed.**

131. **Kits**

The Certificate of Conformance for a Kit shall reference the Kit # (with no revision) and list all details with quantities and revisions per the purchase order requirements. The container must be clearly marked with the kit #.

132. **Specification Control Drawings**

The supplier shall submit a copy of the approved engineering drawing(s) to The Company for all parts that the supplier designs to Specification Control Drawings (SCD's). Any changes to the supplier's engineering drawing(s) shall be approved by The Company prior to implementation.

133. **Raw Material Certification**

A copy of the raw material certification shall be submitted with the shipment that assures conformance to all applicable raw material specification requirements. These certificates must contain reference to the specification and revision to which the material conforms. All chemical, physical, and mechanical properties test results required by the specification shall be retained by the supplier. Traceability from the certification to the material submitted is required and shall be retained.

134. **Approved Sources**

All manufacturers and part numbers called out on the drawing, whether titled Suggested, Approved, or Reference are the only parts approved to be procured. No other manufacturers or part numbers shall be provided without prior approval from Design Engineering and communicated through a drawing change. The manufacturer's parts may be procured from authorized distributors; however traceability back to the manufacturer shall be submitted. The supplier Certificate of Conformance shall also reference the approved manufacturer's catalog part number provided with the shipment. Manufacturer name changes are acceptable with proper documentation of link to the original design authority. **Note For Bearings:** When the Original Equipment (OE) parts are procured with preservative or alternate lubrication or lubrication shelf life is expired, relubrication of OE parts to meet applicable engineering drawing requirements is permitted. Only OE bearing manufacturer approved sources holding OE bearing lubrication approval/certification authorization are permitted to perform relubrication. Certificate of conformance from bearing OE manufacturer for the part purchased shall be submitted with the shipment. A relubrication certificate from the bearing OE authorized re-lubricator shall be submitted with the shipment. The lube certification shall contain the OE Bearing part number prior to relube, lubricant used, specification, OE Bearing part number after lube, lube lot/batch number, Company part number, OE part mfg lot number, expiration date of lubrication and the name of the agency that performed the lubrication process.

135. **Removed.**

136. **UTC Production Part Approval Process (UPPAP)**

The supplier shall submit a Production Part Approval Process packet that conforms to the requirements of the company document ASQR-09.2 on the first production run of product. See section 5.3.1 of ASQR-09.2 for submission levels. Also, per ASQR-09.2 section 2.3, the supplier shall perform and submit a full or a partial change approval request for affected characteristics, when any of the following events occurs:

- a. A new part (e.g., a specific part/material not previously supplied to the member company).
- b. Correction of a discrepancy on a previously submitted part.
- c. A product modification resulting in a new part number.
- d. Any process change or situation requiring an update or resubmission of all, or portions of the UPPAP file.

137. **Maintenance Overhaul and Repair**

Each part number contained in the purchase order shall be inspected, handled, repaired, and packaged to the requirements of WI1010-2 Form 1. Employees performing certain tasks shall also meet the requirements of WI1010-2 Form 1. All documents and records must be in English. A copy of the Work Order package shall be submitted with each part number IAW WI1010-2 Form 1. Traceability from the certification to the material submitted is required and shall be retained for the life of the product plus 10 years.



138. **Frozen Process**

Supplier shall manufacture the products as per the Process Control Document (PCD) which defines / establishes methods of manufacturing or processes that are Frozen and approved by Collins Aerospace Engineering. Supplier shall follow Frozen Process requirements as per procedure MP1067-2. Changes to processes and methods identified in the PCD shall not be made without first obtaining documented customer approval. Process changes or deviations include, but are not limited to:

- Material changes
- Order of Operations / Process Flow Sequence
- Method of Manufacture
- Equipment / Tooling changes

The supplier certificate of conformance shall have the Collins Aerospace approved frozen process PCD number and Revision number on it.