

# Quality Systems Procedure Curtiss Wright Sensors-North America Supplier Quality Manual QP-06000

FAA APPROVAL REQUIRED PRIOR TO RELEASE

Director, Quality & Compliance - Sensors	Darren Robinson
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**Approval procedure:** initial release and revision approvals will be done through a custom document via DocSign. A copy of the digital approvals from DocSign will be appended to this document.

**Procedure Control:** this procedure will be maintained and approved through the Document Control Center located in Curtiss Wright Sensors-North America, Gilbert, Arizona site.

### Revision History

Revision	Date	Section	Description
-	10/15/2014	All	Initial release, effective date 01/01/2015
A	12/08/2014	Supplier Requirements	Remove 9b which was a note used as a reminder to insert a form.
		Product Specific Quality Clauses	Revised wording of Q9 to match customer requirements for flight safety labeling.
		Supplier Requirements	Added 2. B. iii requiring expiration date be included on age controlled material.
		Changes in Design Materials and Process	Modified wording of 4 to include AS9102 compliance.
		Problem Resolution	Added 3, A, vi to define timing required for RMA to be provided from supplier.
		Product Specific Quality clauses	Revised wording of Q2 to define applicability to machined parts only.
		Product Specific Quality clauses	Changed Q5 from Argo approved to Eaton approved.
		Product Specific Quality clauses	Added Q11 for items that will require the use of Boeing approved suppliers.
B	10/8/2015	Business Hold	Revised section to match QP-17002.
		Quality System Requirements	Revised 2 and 3 to match QP-17002.
		Product Specific Quality clauses	Added Q12 for compliance to DFARS 252.225-7014.
		Product Specific Quality clauses	Added Q13 for compliance to The Buy American Act.
		Product Specific Quality clauses	Added Q14 to clarify DIP requirements for the Gilbert Sensors site.
		Approvers	Added Cody Owens
			Added Manuel Reyna
		Product Quality	Added Visual Acceptance Criteria QP-20020
C	11/20/2015	Supplier Requirements	Added #3 stating that models, samples, sketches, etc are for reference only.
D	3/18/2016	Approvers	Changed author to Jeff Chubbs
		Approvers	Removed Glenn Pont
		Approvers	Removed Bryan Thomas
		Approvers	Removed Dan O'Connell
		Approvers	Added Charles Falardeau
		Supplier Requirements	Added #17 Obsolescence or End of Life
		Problem Solving Expectations	Added the use of the 8D format and additional problem solving methods.
		Problem Resolution	Extended implementation time frame for permanent corrective actions from 10 to 30 business days.
		Non-Conforming Materials	Added that supplier shall notify Curtiss-Wright within 24 hours of discovery that nonconforming materials have been delivered to Curtiss-Wright.
		Non-Conforming Materials	Added that supplier shall include approved deviation request form with delivery of affected product.
E	1/9/2017	Counterfeit Parts Prevention	Added #3
		Packaging and Shipping Requirements	Added #4 and #5
		Misdirected Shipments	Added as a new section.

Revision	Date	Section	Description
		Control Of Sub Tier Suppliers	Added flow down requirement of this document to sub tier suppliers.
		Supplier Assessments	Revised section to match QP-17002.
		Supplier Requirements	Added #5
		Supplier Requirements	Revised #13 to include NADCAP requirement for source control items and processes mandated by customer contract.
		Product Specific Quality Clauses	Removed Q6. (See Supplier Requirements #5)
F	9/22/2017	Packaging and Shipping Requirements	Revised #5 to specify machined components cannot have part-to-part contact.
		Supplier Assessments	Added reference to QP-17002.
		Supplier Requirements	Added #5c
		Product Specific Quality Clauses	Revised Q3, Q5 and Q11 Added Q15, Q16, Q17, and Q18
G	4/6/2018	Approvers	Removed Manuel Reyna
		Approvers	Added Fernando Dorantes
		Approvers	Removed Director of Materials-Cody Owens
		Approvers	Added Senior Supply Chain Manager-Denise Bridges
		Approvers	Removed Alan Weber
		Approvers	Added Dan O'Connell
		Approvers	Removed Charles Falardeau
		Approvers	Added Graham Macdonald
		Counterfeit Parts Prevention	Added reference to AS5553
		REACH and RoHS Compliance	Added new section
		Delegated Inspection Authority / Source Inspection	Revised #3
		Product Quality	First Article Inspection – added requirement for suppliers to provide major diameter, minor diameter and pitch diameter for threaded features.
		Product Quality	Non-Conforming Materials – added requirement that suspect, nonconforming, or unprocessed items must be identified and packaged separately.
		Product Quality	Delivery Requirements – added requirement that suspect, nonconforming, or unprocessed items must be identified and packaged separately.
		Product Specific Quality Clauses	Added Q15 a – d
		Product Quality	From: The Seller shall provide notification of nonconforming material/ parts that have been delivered to SENSORS NA that may affect the eventual fit, form or function of Sensors NA products. Notification must be received within 24 hours of discovery of the nonconformance. This Notification will include at a minimum  To: The Seller shall provide notification of any nonconforming material/ parts that have been delivered to SENSORS NA. Notification must be received within 24 hours of discovery of the nonconformance. This Notification will include at a minimum

Revision	Date	Section	Description
H	3/1/2019	Approvers	Removed Alex Nykamp
		Approvers	Added Michael Whitehouse
		Approvers	Removed Graham Macdonald
		Counterfeit Parts Prevention	Added reference to AS6174, AS6496, AS6801, and AS6171.
		Foreign Object Debris / Damage (FOD) Prevention	Revised wording to allow suppliers to use NAS-412 as a guide for FOD programs.
		Changes in Design Materials and Processing	Added #5
		Supplier Performance	Removed reference to monthly delivery of supplier scorecard.
		Supplier Requirements	Edited limited life requirement in 2b to mirror incoming inspection procedure.
		Supplier Requirements	Added helium to #8
		Supplier Requirements	Added #19
		Product Quality	Added inspection plan requirement to #1
		Product Specific Quality Clauses	Removed Q12. Revised Q17. Added Q19, Q20 and Q21
J	8/9/2019	Approvers	Added Jeff Troutner
		Safety and Ethics	Added new section to align with AS9100D
		Product Quality	Revised grammar in paragraph 4a
		Product Specific Quality Clauses	Revised Q15 to included proper paragraph references in ASQR-01
		Product Specific Quality Clauses	Added Q22 and Q23
K	11/8/2019	Approvers	Removed Fernando Dorantes Added Omar Chavez
		Supplier Requirements	Revised #6 Traceability to Source of Origin
		Product Quality	Revised #3.a.vi to allow return of nonconforming product to a supplier without an RMA.
		Product Quality	Added #12 Inspection Tools and #13 Contract Review
L	1/6/2021	Approvers	-Redefine approvers to leave Director of Procurement and Director of Quality & Compliance
		Supplier Requirements	-Update Supplier Requirements section to add item 20) on Supplier Requirement section for "No Work Done" on subcontracted processes, test and/or inspections on Curtiss Wright supplied products
		Product Quality	-Add Product Quality Section, 3) Return Product Authorization section and remove RMA related

			items from Problem Resolution section
		Product Quality	<ul style="list-style-type: none"> <li>- Eliminate the Product Quality Section, 4)</li> <li>Modify Problem resolution section from 3) to 4)</li> <li>-Problem Solving Expectations</li> <li>-Update Product Quality Section, 4) Problem Resolution, a) CAR Process to align the Corrective Action cycle time and requirements with the Supplier Corrective Action Sensors procedure.</li> </ul>

Revision	Date	Section	Description
		Product Quality	<ul style="list-style-type: none"> <li>-Change Product Quality, section 2) from Non-Conforming Materials to Non-Conforming Materials &amp; Notification of Escapement</li> <li>- Change time frame of notification of NoE from 24 hours to 48 hours</li> </ul>
		All Across	Standardize the name of the company on the procedure as Curtiss Wright Sensors-North America
		Supplier Performance	Redefine completely section: Supplier Performance, item 4)
		Product Quality	Change Product Quality, First Article Inspection, submit the First Article Inspection for approval from "Buyer" to "Supplier Quality Engineer".
		REACH and RoHS Compliance	<p>REACH &amp; Rohs, add items 4) &amp; 5)</p> <p>4. The declarant certified that the supplier has performed the required due diligence in compliance with EU regulation to verify that all materials supplied to Curtiss Wright Sensors-North America meet the required limits of REACH and Rohs. Vendor is responsible for notifying Curtiss Wright Sensors-North America buyer if for any reason a material is found to no longer meet the defined threshold of REACH and Rohs</p>

			5. Supplier is responsible to flow down to the sub-tier suppliers the REACH and RoHS regulations and ensure they are in compliance with the Curtiss Wright Sensors-North America requirements
		Product Specific Quality Clauses	Changed clause 13. (Q13) From: Products must be in compliance with The Buy American Act 41 U.S.C. §§ 8301–8305 To: Products must be in compliance with The Buy American Act 41 U.S.C. §§ 8301–8305. Supplier must ensure this requirement is met at the time the purchase order is accepted. Curtiss Wright Sensors-North America buyer may request evidence of compliance
		Product Specific Quality Clauses	Add clause 24. (Q24) End use of item shall be in compliance with Buy America Act. US based material must be used for processing. Supplier must ensure this requirement is met at the time the purchase order is accepted. Curtiss Wright Sensors-North America buyer may request evidence of compliance
M	3/01/2021	Packaging and Shipping Requirements	Add clause 6. Establish requirements for Suppliers that are to use Wood Packaging Material (WPM)
N	7/14/2021	Title Block	Page 1, Added: Director, Quality & Compliance – Sensors as Darren Robinson.

Revision	Date	Section	Description
		Slavery and Human Trafficking	Page 11, Removed "...complete an annual certification..." and replaced with "...have a process to ensure..."
		Traceability to Source of Origin	Page 16, Added: For all purchased material: If there are multiple lots/heat lots representing the order please contact your buyer for possible split of the order or line item additions.

		Product Specific Quality Clauses	Page 25, Revised Q14: added following bold text, "A Detail Inspection Plan (DIP) is required for <b>all Honeywell part numbers; purchased parts...</b> "
		Product Specific Quality Clauses	Page 27, Added: Q25 This part has a QIP (Quality Inspection Plan) requirement. It is the suppliers responsibility to contact the Curtiss Wright Buyer to get the latest revision. This form shall be populated by the vendor and sent to Curtiss Wright as part of the release documents.
P	5/12/2022	Title Block	Page 1, Revised Supply Chain approval signature to Michael Tran
		Scope of Procedure	Page 8, Added "parts" to statement to match Purpose of Procedure statement and for clarification.
		Quality Systems Requirements	Page 8, Quality Systems Requirements, Item 2: Revised for clarity of services and types. Revised approvals to Director of Quality or the Procurement Manager.
		Record Retention	Page 8, Revised item 1 for clarity and added item 4 to statement. Page 8, Removed item 2 and re-numbers sequence.
		Right of Entry	Page 8, added sub-tier suppliers to statement.
		Foreign Object Debris/Damage (FOD) Protection	Page 10, Revised item #2. Added item #3.
		Supplier Requirements	Page 15, Revised Item 5, Inspection Report Required for Each Shipment: Revised for detail and clarity.
		First Article Inspection	Page 19, Removed e and re-identified alpha sequence.
		First Article Inspection	Page 20, Added First Article Inspection, Item h: Clarified Requirement for OSV's.
		Non-Conforming Material	Page 20, Item #2 – Added C=0 statement.
		Problem Resolution	Page 20, Item #4 - Revised complete SCAR section.
		Delivery Requirements	Page 22, Revised Item 11, Delivery Requirements.
		Sample Plans	Page 23 – Added Sample Plans
		Product Specific Quality Clauses	Page 24, Q4 – Added "IAW SPOC 165" to address CAR.
		Product Specific Quality Clauses	Page 27, Q25 – added in lieu of inspection report requirement.
			Page 28, Added the Supplier Acknowledgement sheet.

R	7/21/22	Foreign Object Debris / Damage (FOD) Prevention	Page 11, Revised wording to allow suppliers to use AS9146 as a guide for FOD programs.
		First Article Inspection	Page 21, Item h modification, point iii: add Process perform evidence and test results.
		Certificate of Conformance required from Supplier	page 15, Point number 4 modification, subsection ix added, add to CofC certification number and expiration date
		Product Specific Quality Clauses	Page 24, Q4, Q10, Q14, Q18 and Q23 were combined into a single quality clause - Q10. Q4, Q14, Q18 and Q23 were removed.
T	1/3/2023	Product Specific Quality Clause	Page 29, Added Q27 APQP Requirements
U	11/30/23	Product Specific Quality Clause	Page 29, Added Q28 Distributors/Stock list must be certified to AS / EN9120 & Q29 Compliance Matrix to current revision of QP-06000 Supplier Quality Requirements to be provided.
		Quality System Requirements	Page 9, Suppliers must upon request provide Curtiss Wright Sensors-North America access to AS9100, ISO9001, ISO17025, NADCAP audit results and findings.
		Product Specific Quality Clause	Reworded Q29, added Q27 PPAP requirement.



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## **Purpose of Procedure**

The purpose of this manual is to communicate Curtiss Wright Sensors-North America's quality requirements and expectations to suppliers.

The products being procured are used in commercial and military aerospace platforms, medical devices, and satellite applications. It is key Curtiss Wright Sensors-North America suppliers understand the criticality of the product quality required.

It is our intent to do business with suppliers who are able to provide parts, materials, processes, services consistently to specifications, at a competitive price, and in accordance with the defined delivery schedule. The manual is intended to aid suppliers in their understanding of requirements regarding specific management, communication, and reporting processes.

## **Scope of Procedure**

This procedure applies to all suppliers who provide parts, materials, equipment, and services to Curtiss Wright Sensors - North America sites.

## **Quality System Requirements**

1. Suppliers are encouraged to develop foundational quality systems which provide for continuous improvement and emphasize defect prevention while reducing variation and waste.
2. AS9100, ISO9001 or ISO17025 certifications are required for new suppliers who provide materials as listed in the BOM or services that impact the product performance (i.e. calibration, testing, etc.), unless otherwise approved by the Director of Quality or the Procurement Manager.
3. NADCAP certifications are required for suppliers who provide special processes as defined by PRI-SAE QPL listing (ref: [www.eauditnet.com](http://www.eauditnet.com)).
4. Suppliers are required to notify Curtiss Wright Sensors-North America procuring sites of any changes to their Quality System accreditations resulting in system disqualification or downgrading. Failure to do so may result in supplier being disapproved.
5. Suppliers must upon request provide Curtiss Wright Sensors-North America access to AS9100, ISO9001, ISO17025, NADCAP audit results and findings.

## **Record Retention**

1. Documentation related to testing, inspection and traceability shall be retained indefinitely by suppliers or its sub-tiers. If unable to meet the record retention requirement the supplier shall provide Curtiss Wright Sensors-North America all records relevant to a purchase order for the required record retention period.
2. Storage conditions shall allow the records to remain legible, readily identifiable, and retrievable.

## **Right of Entry**

1. Curtiss Wright Sensors-North America, its customers, and government officials reserve the right to verify the quality and delivery of all materials and services included in this procurement at Supplier's facility and their sub-tiers.

## **Approved Supplier List**

1. Curtiss Wright Sensors-North America will only purchase materials, equipment, and services from suppliers listed in the “Approved Supplier” list.
2. Curtiss Wright Sensors-North America will evaluate and select suppliers based on their ability to supply materials, equipment, and services to specified requirements.

## **Counterfeit Parts Prevention**

1. In response to the 2012 National Defense Authorization Act, Section 818 and to help mitigate the risk of obtaining counterfeit electronic/electrical parts, Curtiss Wright will only purchase electronic/electrical parts with a distributor from those suppliers who can provide traceability to an authorized Original Components Manufacturer (OCM) for each item/part number.
2. Required with Shipment: Manufacture (MFR) Certificate of Conformance (C of C), as well as distributor (C of C) is required depending on the supplier. If the supplier is the manufacturer, then the MFR C of C is all that is needed. If a distributor is the supplier, then the distributor C of C is also required. The MFR C of C must have the distributor’s information on it.
3. Suppliers shall develop and implement a counterfeit parts control plan that documents its processes used for risk mitigation, disposition, and reporting of counterfeit parts. The plan shall meet the intent of AS5553, AS6174 (Counterfeit Material), AS6496 (Authorized Distributor), AS6801 (Independent Distributor), and AS6171 (Test Methods). Suppliers shall disclose to Curtiss Wright Sensors-North America if they are not an authorized source of supply.
4. All mechanical, electro-mechanical, and material commodities are subject to the same requirements for counterfeit prevention.

## **REACH and RoHS Compliance**

1. EU Regulation No. 1907/2006 concerns the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) and establishes a European Chemicals Agency. All companies producing, importing and using chemicals in Europe are obligated to adhere to REACH regulations.
2. The RoHS Directive will ban placement into the EU market of new electrical and electronic equipment containing more than designated maximum allowable levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants, effective July 1, 2006. Reference RoHS Directive 2002/95/EC.
3. Suppliers will be required to complete REACH and RoHS declarants as part of Sensor’s evaluation and re-evaluation process.
4. The declarant certified that the supplier has performed the required due diligence in compliance with EU regulation to verify that all materials supplied to Curtiss Wright Sensors-North America meet the required limits of REACH and Rohs. Vendor is responsible for notifying Curtiss Wright Sensors-North America buyer if for any reason a material is found to no longer meet the defined threshold of REACH and Rohs
5. Supplier is responsible to flow down the REACH and RoHS regulations to the sub-tier suppliers and ensure they are in compliance with the Curtiss Wright Sensors-North America requirements

**Safety and Ethics**

1. Suppliers shall ensure that their employees are aware of:
  - a. Their contribution to product or service conformity
  - b. Their contribution to product safety
  - c. The importance of ethical behavior

**Conflict Minerals Compliance**

1. Seller agrees that it will (1) provide Buyer with the information Buyer in its sole discretion deems necessary to comply with the requirements of Section 1502 (“the Provision”) of the Dodd-Frank Wall Street Reform and Consumer Protection Act (“Act”) (Pub. L. 111-203, 124 Stat. 1376 (July 21, 2010)) relating to disclosure and reporting obligations concerning the use of “conflict minerals” during each calendar year on or before February 1st of the next year and (2) undertake due diligence on its supply chain and any other measures as necessary to obtain the information necessary for Buyer to comply with such requirements.

**Affirmative Action in Federal Contracting**

1. Curtiss Wright Sensors-North America is a federal contractor which complies fully with Executive Order 11246, as amended, and the applicable regulations contained in 41 C.F.R. Parts 60-1 through 60-60; 29 U.S.C. Section 793 and the applicable regulations contained in 41 C.F.R. Part 60-741; 38 U.S.C. Section 4212 and the applicable regulations contained in 41 C.F.R. Part 60-250 and/or 60-300; and 29 C.F.R. Part 471, Appendix A.

**Slavery and Human Trafficking**

1. Curtiss-Wright Corporation requires that all Supplier/Subcontractor’s must have a process to ensure that the production of materials incorporated into any product sold or otherwise provided to Curtiss-Wright Corporation and/or its subsidiaries complies with laws regarding slavery and human trafficking of the country or countries in which my firm does business. If you have not completed an annual slavery and human trafficking certification, then please contact your Curtiss-Wright Corporation buyer.

**Foreign Object Debris / Damage (FOD) Prevention**

1. Supplier shall maintain a FOD prevention. National Aerospace Standard NAS-412, Foreign Object Damage/ Foreign Object Debris (FOD) Prevention and AS9146 Foreign Object Damage (FOD) Prevention Program – Requirements for Aviation, Space, And Defense Organization may be used as a guide.

Suppliers must visually inspect all surfaces of each part 100% to ensure all parts are clean and FOD free prior to shipment. Suppliers must ensure all threads, blind holes, passageways, cast and/or machined parts are clear of chips, core material, dirt, breakout of cast walls, and other FOD via inspection by competent individuals using a borescope, endoscope, flexible fiber scope, or similar equipment.

2. Suppliers must visually inspect all external surfaces of each part to ensure all parts are clean and FOD free prior to shipment. By delivering items to Curtiss Wright Sensors-North America, supplier shall be deemed to have certified that such items are free from any foreign materials that could result in FOD.
3. Suppliers must ensure all threads, blind holes, passageways- cast and/or machined are clear of chips, core material, dirt, breakout of cast walls, and other FOD via inspection by competent individuals using a borescope, endoscope, flexible fiber scope, or similar equipment capable of detecting any FOD. It is highly recommended to use an appropriate power flush method to remove FOD.

### **Packaging and Shipping Requirements**

1. Supplier shall ensure the use of adequate protective measures to prevent damage during transportation and storage, including application of packages and wraps, cushioning, and complete identification marking of unit, and intermediate and exterior containers
2. Products shall also be identified per specification and/or drawing requirements when applicable. Mil-STD-130 may be used as a guide.
3. No egg carton containers made of a paper base shall be used to ship product to Curtiss Wright Sensors-North America.
4. The use of Styrofoam chips (or peanuts) is no longer an acceptable packaging method.
5. Machined components shall be packaged in such a way to prevent damage due to metal-to-metal contact. NOTE: Packaging in individual plastic bags does not provide adequate protection.
6. Suppliers that are to use Wood Packaging Material (WPM) shall ensure that the Wood Packaging Material (WPM) is either heat treated or fumigated with methyl bromide in accordance with International Plant Protection Convention's (IPPC) International Standard for Phytosanitary Measures No. 15 (ISPM 15). The WPM should be marked with an approved international mark certifying that it is treated. Purpose of this requirement is to reduce risk of pest contamination spreading in the United States.

Link to the IPPC ISPM 15.

[ISPM 15 2018 En WoodPackaging Post-CPM13 Rev Annex1and2 Fixed 2019-02-01.pdf \(ippc.int\)](#)

Link to U.S. Customs and Border Protection statement regarding the WPM requirements.

[Wood Packaging Materials | U.S. Customs and Border Protection \(cbp.gov\)](#)

### **Misdirected Shipments**

1. Definition: External delivery that does not arrive to contracted destination at fault or error of supplier. It is the responsibility of the supplier to refer to each PO header SHIP TO ADDRESS as it may vary.
2. Misdirected supplier deliveries are costly and have potential to drive delays to Curtiss-Wright's factories and valued customers. Suppliers will be subject to incur all shipping and handling costs incurred by Curtiss-Wright due to misdirected shipments without prior Supplier notification. This includes both inbound and outbound carrier costs including expedite fee's as required and are subject to a "package redirect fee" up to 100\$. However, there is no monetary limitation on recovery

of costs incurred by Curtiss-Wright for any correction of repackaging, repacking, and remarking deficiencies regarding hazardous materials.

### **Control Of Sub Tiers Suppliers**

1. The supplier has the responsibility to flow down all applicable requirements contained within this Supplier Quality Manual as well as those found on all purchase orders, drawings, and specifications received from Curtiss Wright Sensors-North America.

### **Delegated Inspection Authority / Source Inspection**

1. Where required by purchase order the supplier will assign a source acceptance delegate, who assumes full responsibility for all aspects of part conformity. The Delegate signs statement, "This shipment accepted by Curtiss Wright Sensors-North America Supplier Quality Assurance Delegate."
2. Where required by purchase order Source Inspection will be required by a government representative. For those orders:
  - a. Government Inspection is required prior to shipment of item(s) from Seller's facility. Upon receipt of the procurement, Seller shall promptly:
    - i. Notify a Government Representative (or if none, the nearest Army, Navy, Air Force or Defense Supply Agency Inspection Office) so that arrangements can be made for Government Inspection.
    - ii. Provide a copy of the procurement contract to the Government Representative.
  - b. In the event the Government Representative cannot be located, the Curtiss Wright Sensors-North America buyer should be notified immediately.
3. Where required by purchase order, Source Inspection will be performed by Curtiss Wright Sensors-North America, a customer representative, or a delegate.
  - a. Source inspection will be performed at Seller's facilities during the manufacture, test, and/or inspection of items furnished by those purchase orders.
  - b. Curtiss Wright Sensors-North America reserves the right to conduct (or waive) surveillance of work-in-progress, inspection and/or test at points selected by Curtiss Wright Sensors-North America quality.
  - c. Source Inspection shall not relieve the Supplier's requirement to fully comply with the specifications and all the terms and conditions of the Contract/Purchase order
  - d. Source Inspection will be scheduled and coordinated with the supplier. The supplier shall furnish reasonable access to relative contract, design and specification data, and the necessary equipment and space to perform any such inspections.

### **Dock to Stock**

1. Suppliers may be nominated for a dock to stock receiving program for Curtiss Wright Sensors-North America sites.
2. Where nominated, QP-10011 will be utilized to qualify the supplier for dock to stock.

### **Changes in Design Materials and Processing**

1. Supplier shall not make any changes in product design, material, processing, or in the methods of fabrication, without prior writing approval by Curtiss Wright Sensors-North America.

2. For catalogue or COTS items written notification to Curtiss Wright Sensors-North America is required for any changes in product design, material, processing, or in the methods of fabrication.
3. Supplier shall use QF-06000-1 Request to Change Form to obtain approval prior to any changes being made. Tooling moves to an alternate supplier manufacturing facility may require a Quality System audit of the new facility. Suppliers are prohibited from moving tools without prior notification and approval from Curtiss Wright Sensors-North America.
4. When sub-tier suppliers are changed, Curtiss Wright Sensors-North America shall be notified in writing. A first article in compliance with AS9102 will be required where sub-tier suppliers are changed.
5. When sub-tier suppliers have been acquired by another entity, sold to another entity, or plan to cease operation, Curtiss Wright Sensors-North America shall be notified in writing.

### **Supplier Assessments**

1. Per QP-17002, two types of supplier audits will be utilized by Curtiss Wright Sensors-North America where a supplier provides materials listed in a BOM or calibration and test services: (a) on-site supplier audit or (b) a supplier self-audit. Auditing of a supplier who does not provide materials listed in a BOM, equipment, or other services may be required at the discretion of the Quality Manager.
2. On-site supplier audit:
  - a. This type of audit may be performed when required by contract, to review quality concerns, to review critical components, or at the request of another department.
  - b. Must be performed for machining suppliers not yet in QC Vendors that will be producing Curtiss Wright Sensors-North America designed components or Curtiss Wright Sensors-North America customer designed components. This requirement may be waived and replaced by a supplier self-audit with the approval of the Host Site Quality Manager.
  - c. QP-17003 will be the document used for on-site supplier audits.
3. Supplier self-audit:
  - a. Required when the supplier's AS9100, ISO9001, NADCAP, or equivalent certification expires. When possible, the self-audit form will be sent to the supplier in advance of their certificate's expiration date.
  - b. Can be performed as an alternative to an on-site supplier audit except for machining suppliers not yet in QC Vendors that will be producing Curtiss Wright Sensors-North America designed components or Curtiss Wright Sensors-North America customer designed components
  - c. QP-17004 will be the document used for supplier self-audits.

### **Supplier Performance**

1. Performance Reporting will be delivered to suppliers via the Supplier Scorecard.
2. Supplier Scorecards will be delivered to those suppliers to Curtiss Wright Sensors-North America which fall into the top 80% of spend and top 80% of volume received on an annual basis. Supplier scorecards will also be sent to those suppliers the quality or procurement teams deem underperforming.
3. Suppliers who are provided a Supplier Scorecard will be expected to deliver a continuous improvement report where their month-on-month OTD or PPM degrades.
4. Curtiss Wright Sensors-North America will require formal corrective actions from suppliers who are not meeting the expected performance levels of Quality, On time Delivery, Business Disruption, or any other Key Performance Indicators and requirements set by Curtiss Wright Sensors-North

America. Suppliers will be required to identify the Root Cause of the poor performance and address irreversible Root Cause Corrective Actions to systemically improve performance and deliver sustaining results within acceptable levels.

### **Disapproved or Business Hold Status**

1. A supplier will be disapproved and placed on business hold under the following conditions:
  - i. The supplier's "Approved Until" date has expired.
  - ii. The supplier's quality or delivery performance is considered unacceptable.
  - iii. The supplier has had no physical receipts for a period of three (3) calendar years.
  - iv. Other mitigating factors.
2. When a supplier is disapproved in one Curtiss Wright Sensors-North America site, the disapproval will apply to all Sensor's sites.

### **Supplier Requirements**

1. Raw Material –
  - a. Material Contamination
    - i. Mercury
      1. The supplier shall ensure that material furnished is free from mercury contamination. Mercury-bearing instruments and equipment are potential sources of mercury contamination and so, shall not be used in the processing of parts.
    - ii. Zinc or cadmium
      1. Seller shall not use any zinc or cadmium processes on part(s) or assemblies supplied unless required by drawing.
2. Age Control
  - a. Cured items with limited life
    - i. Cured items that have a limited life (i.e., "O" rings, gaskets, seals), on which the cure date has exceeded 25% of the shelf life shall not be shipped to Curtiss Wright Sensors-North America, or if at the time of receipt at Curtiss Wright Sensors-North America, more than three months have passed since the date of cure.
  - b. Limited Life Items
    - i. Seller shall not ship to Curtiss Wright Sensors-North America material on which more than 20% of the shelf life has expired at the time of receipt by Curtiss Wright Sensors-North America.
    - ii. Seller must specify the name of the manufacturer and date of manufacture on product certification.
    - iii. Seller must specify the expiration date of product supplied on the Certificate of Conformance.
3. Any models, samples, sketches, emails, verbal communications, etc., provided by Curtiss Wright are for REFERENCE only. Materials that do not meet applicable drawings and/or specifications will be considered non-conforming.
4. Certificate of Conformance required from Supplier
  - a. Seller shall provide a Certificate of Compliance (or equivalent) with each shipment of parts signed by a legally authorized representative of the Sellers organization.
  - b. The Certificate of Conformance shall include the following:
    - i. Curtiss Wright Sensors-North America NA part number and quantity.



- ii. Part revision level.
- iii. Military/Government/ Industry Specification Number (if applicable).
- iv. Description of material or services
- v. Serial number of lot/batch number (if applicable).
- vi. Curtiss Wright Sensors-North America Purchase Order or Subcontract number.
- vii. Materials supplied must meet applicable drawings and/or specifications (Documentation must be on file to support this statement, and is subject to Curtiss Wright Sensors-North America examination upon request). Include all certifications
- viii. If the Supplier is a Distributor, then a record of actual Manufacture Certification must also accompany the shipment.
- ix. Supplier shall add their AS9100, ISO9001 and/or NADCAP registration number and expiration date on the CofC's.

Note: Suppliers with no third-party certification must complete a supplier self-audit in accordance with the requirements of QP-17002.

#### 5. Inspection Report Required for Each Shipment

- a. Inspection report is not to be confused with a FAIR and a FAIR shall not be used to fulfill this requirement. The intent of the Inspection Report certifies measurement and acceptance of the production lot/order shipped.
- b. The Seller shall provide the actual range of inspection results documented on an Inspection Report. The inspections shall be performed on each manufactured lot of parts and the Inspection Report shall be provided with each shipment. The reports must be stamped/signed and dated to indicate supplier acceptance.
- c. The form format may be at the supplier's discretion however as a minimum it must include:
  - i. Supplier Name
  - ii. Date
  - iii. Part Number
  - iv. Revision
  - v. Production Lot / Serial Number
  - vi. Quantity
  - vii. Drawing Requirement
  - viii. Drawing Location
  - ix. Actual Range of Results
  - x. Measurement Equipment/Tools/Gages Used
  - xi. Inspector Name and Stamp
- d. The features inspected must be recorded in a range format using an AQL of no less than 1.0 depending on the feature inspected (minor / major).
- e. If key characteristics are on the drawing 100% of the pieces must be inspected and documented on the Inspection Report.
- f. The drawing features recorded on the Inspection Report are at the discretion of the supplier. However, all features with an overall tolerance band of .006 must be included in the Inspection Report.
- g. The number of features recorded in the Inspection Report are at the discretion of the supplier but must include a minimum of 10% of the overall features on the drawing.
- h. Visual Inspection shall be documented in the Inspection Report and inspected IAW QP-20020. It is highly recommended that 100% visual inspections are performed to prevent any disruptions and visual rejections, unless otherwise stated on the Drawing or Purchase Order.

- i. Outside Supplier Vendors (OSV) are also required to comply with this requirement. The OSV requirements are dependent on the following:
    - i. OSV's performing machining or affecting dimensional features – This requirement, inspection report and visual inspection requirement, applies only to the features machined *or affected* by the OSV. The features are defined by the purchase order requirements.
    - ii. OSV's performing non-machined features – non-machined OSV's are classified as, but not limited to, functional testing facilities, NDT facilities, plating facilities, paint facilities, etc. Full certification identifying the specification requirement and results may be used in lieu of this requirement.
  - j. A supplier controlled Quality Plan may be used in lieu of this requirement. The supplier is recommended to submit the Quality Plan to their Curtiss Wright Sensors-North America Supplier Quality Engineer for approval. At a minimum the Quality Plan must meet the criteria listed above, item "c".
  - k. Curtiss Wright Sensors-North America shall verify conformance of this inspection data to specifications upon receipt of each shipment including records or documentation required by the Purchase Order for lot control, testing, etc.
  - l. The use of statistical techniques for product acceptance shall be communicated to Curtiss Wright Sensors-North America.
6. Traceability to Source of Origin
- a. The supplier shall establish and maintain a system that ensures traceability of material throughout manufacturing, special processing, and delivery to Curtiss-Wright. The traceability system shall provide sufficient means to maintain current revision, specification, and quality requirements from raw material through finished product for all materials and processes used by the supplier and its sub-tier suppliers.
  - b. Valid traceability links between documentation may include:
    - i. Curtiss-Wright PO number
    - ii. Supplier work order number
    - iii. Heat lot number for raw material
    - iv. Lot or batch number
    - v. Serial numbers
  - c. Proper documentation that can be linked from finished product to raw material and processes shall be provided to Curtiss-Wright with each delivery.
  - d. For all purchased material: If there are multiple lots/heat lots representing the order please contact your buyer for possible split of the order or line item additions
7. Quantitative Test Reports Required
- a. Seller shall provide with each shipment of material:
    - i. Authenticated, quantitative test reports showing the degree of compliance with physical property specifications;
    - ii. Certification of chemical composition
8. All Welding and Brazing Suppliers
- a. Supplier shall provide with each shipment of material, Quantitative Test Reports as listed above for up to and including the following listed supplies:
    - i. Wire (Braze)
    - ii. Flux

- iii. Argon
- iv. Slugs (Braze)
- v. Oxygen
- vi. Acetylene
- vii. Rings (Braze)
- viii. Helium

#### 9. Calibration Certificate

- a. A Calibration Certificate shall be supplied for all measuring and test equipment.
- b. Indicates readings taken before and after calibration, along with extent of adjustments made.
  - i. If the readings are outside of the instruments measurement tolerance, Curtiss Wright Sensors-North America shall be notified immediately.
  - ii. If readings cannot be taken before calibration due to disrepair of the equipment, the certificate shall so state.
  - iii. States that the standards used to obtain readings are traceable to Canadian (NRC), American (NIST) or recognized international standards.
  - iv. Is signed by an authorized representative of the supplier.

#### 10. Electrostatic Discharge (ESD)

- a. For all devices furnished which are considered by Curtiss Wright Sensors-North America to be susceptible to damage from electrostatic discharge. The Seller shall:
  - i. Take the necessary precautions while handling and packaging the deliverable product to prevent damage.
  - ii. Ensure device leads are electrically shorted together by non-corrosive conductive foam or other suitable methods.
  - iii. Ensure the items are encased in electrically static dissipative tubes, carriers, or bags for shipment.
  - iv. The packaging is labeled to indicate that it contains electrostatic sensitive parts.

#### 11. Non-conventional Machining

- a. Approval is required from Curtiss Wright Sensors-North America prior to performing any EDM. (Electrical Discharge Machining) processes on any machined components.

#### 12. Tooling

- a. When a tool (die cast tool, stamping tool, molded rubber tool) has reached its estimated life and the supplier is requesting a new tool, the Supplier must submit sample part(s) to Curtiss Wright Sensors-North America Purchasing for review along with an explanation identifying the areas where the tool needs to be replaced.
- b. Purchasing will then forward to Quality for review. If the tool is used to produce castings then a casting and a machining sample will be required.
- c. When a new tool is produced, the Supplier must identify the tool with the following: Curtiss Wright Sensors-North America part number, month and year of completion. Upon completion of the tool, the supplier must submit a First Article Report listing all characteristics. The part must be fully processed per Curtiss Wright Sensors-North America drawing requirements.

#### 13. Special Processing

- a. All suppliers and sub tier suppliers performing special processes as defined by PRI-SAE QPL listing (ref: [www.eauditnet.com](http://www.eauditnet.com)) shall be NADCAP certified to that process.
- b. Items that are source-controlled or sub-tier suppliers that are customer-mandated shall be subject to the same requirements.

#### 14. Test Specimens and Results when required with each batch

- a. The supplier shall process a test specimen when required by PO and is required to forward the specimen and the test results, showing the degree of compliance to the applicable specifications, to Curtiss Wright Sensors-North America.
  - b. A weld specimen is required when a new weld scheduled is being used.
15. Test Specimen and Results required
- a. The Seller shall provide, with each test piece, authenticated quantitative test reports showing the degree of compliance with the applicable specification.
16. Certificate of Compliance for Test Pieces Required
- a. Seller shall provide a Certificate of Compliance with each test piece under this procurement, signed by a legally authorized representative of the supplier's organization, stating the following:
    - i. Material type
    - ii. Material section number
    - iii. Purchase order number
    - iv. Lab sample I.D number
    - v. Curtiss Wright Sensors-North America process schedule number (if applicable)
    - vi. Applicable specification and revision level
17. Heat Treat
- a. Heat treating, stress relief, and annealing are special processes. The Seller shall make available upon request documented heat run data to Curtiss Wright Sensors-North America.
18. Obsolescence or End of Life
- a. Where a supplier chooses to obsolete or take a product to end of life, Curtiss Wright shall be notified in writing 6 months in advance of the occurrence.
  - b. This notice shall include recommended replacements and the ability for Curtiss Wright to make a last time buy.
19. Passivation
- a. Passivation is required to be performed on all detail components manufactured from 300 and 400 series stainless steel material. The passivation shall be performed IAW AMS2700 unless otherwise specified on the drawing.
20. "No Work Done" on subcontracted processes, test and/or inspections on Curtiss Wright supplied products
- a. This requirement applies to external providers subcontractors (Outside Service Vendor sellers) who performed processes, test and/or inspections (Outside Service Vendor Services/Processes) on components and/or assemblies provided by Curtiss Wright Sensors-North America.
  - b. If Outside Service Vendor seller determines parts received from Curtiss Wright cannot be processed, tested and/or inspected in the received state per the Purchase Order (PO) requirements or poor quality condition, the Outside Service Vendor seller shall:
    - i. Put the purchase order (PO) and physical material on hold; do not send the PO and product back to Curtiss Wright until direction how to proceed is received by Curtiss Wright Sensors-North America buyer.
    - ii. Contact the Curtiss Wright Sensors-North America buyer to communicate the reason why the Outside Service Vendor Service/Process cannot be provided. For technical related items or non-conformance material, Outside Service Vendor seller would provide support information as applicable to the Curtiss Wright Sensors-North America buyer for evaluation and Purchase Order disposition.

- iii. Curtiss Wright Sensors-North America Buyer in coordination with the Supplier Quality Management Engineer will evaluate and provide direction on how to proceed with the purchase order material. In addition, material disposition could be process material “as is”, return to Curtiss Wright Sensors-North America as “No Work Done”, or “Split” the order to advance those parts not impacted by non-conformance condition.
- c. If parts are identified by the Curtiss Wright Sensors-North America buyer to be returned “No Work Done” the following must be completed:
  - i. Include a copy of the e-mail sent by Curtiss Wright Sensors-North America Buyer providing the direction to return the PO and Material as “No Work Done”
  - ii. Clearly tag/identify and isolate the specific product causing the “No Work Done”
  - iii. Clearly identify “No Work Done” in large text in the body of the PO paperwork returned to Curtiss Wright Sensors-North America and external shipping container.

## **Product Quality**

### **1. First Article Inspection**

- a. First Article Inspection applicability is defined by SAE AS9102, section 4.
- b. Suppliers are required to obtain approval for mass production parts prior to shipment through the First Article Approval process.
- c. The purpose of the First Article Approval process is to verify that a supplier’s production process is capable of producing parts to meet Curtiss Wright Sensors-North America specifications.
- d. Suppliers shall conduct a First Article production run and produce parts utilizing normal production equipment, tooling and processes that would be used as in mass production. The Supplier will then submit sample parts from this First Article Production run for approval by Curtiss Wright Sensors-North America.
- e. Suppliers shall submit First Article samples for new parts or changes to existing parts, processes, drawings, manufacturing locations, sub-contractors, or materials, or cessation in manufacturing for two years.
- f. Requirements for the First Article submissions must meet AS9102 requirements at a minimum
  - i. Drawings
    - Each part drawing along with referenced specifications and drawings must be submitted with each First Article.
  - ii. Each dimension and note must be ballooned (numbered)
  - iii. Dimensional results
    - Suppliers must submit the First Article Inspection dimensional results on an AS9102 or equivalent report.
    - A one piece dimensional layout is required for each mold, cavity, die and production line that produces a part.
    - Dimensional results must be provided for all dimensions, notes and other specifications on the part drawing.
    - For threaded features, dimensional results are requested for major diameter, minor diameter, and pitch diameter.
    - The dimensional layout must correspond to the ballooned drawing.
  - iv. Material certifications

- Suppliers must provide evidence of compliance to material specifications through material and performance test results.
  - Each First Article submission must be accompanied by a Material Certification report.
- v. Samples
- Suppliers may be required to submit up to 5 sample parts with each First Article Submission.
  - Samples from tooling should be submitted for each mold or cavity
  - Each sample part must have a tag indicating it is a First Article sample. The tag should include part number, revision level, date parts were produced, supplier name, and cavity number.
- g. No First Articles should be submitted to Curtiss Wright Sensors-North America if any dimensions or test results do not meet part drawing requirements. Supplier shall make every attempt to implement corrective action for any out of spec condition. Suppliers shall contact Curtiss Wright Sensors-North America if they are unable to meet part drawing. Curtiss Wright Sensors-North America will then inform suppliers on required course of action.
- h. Outside Supplier Vendors (OSV) Requirements
- i. OSV's performing machining or affecting dimensional features – This requirement, First Article Report, applies only to the features machined *or affected* by the OSV. The features are defined by the purchase order requirements.
  - ii. OSV's performing non-machined features – non-machined OSV's are classified as, but not limited to, functional testing facilities, NDT facilities, plating facilities, paint facilities, etc. Full certification identifying the specification requirement and results may be used in lieu of this requirement.
  - iii. Additional to the CofC for the special process suppliers, shall be added the evidence of the process performed and the results of the evaluation of the process, if the supplier is not able to provide all the necessary information, the supplier shall complete AS9102 Form, applicable to all special process including but not limited to show below:
    - **NDT:** Liquid Penetrant, Magnetic Particle, Ultrasonics, X-ray
    - **Heat Treating:** For multiple Alloy Families: Stress Relieving, Annealing, Carburizing, Nitriding, Carbonitriding, Ferritic Nitrocarburizing, Ion Nitriding, Vacuum Heat Treating, Vacuum Oil Quenching, Hardening, Induction Hardening, Furnace Brazing, Dip Brazing, Induction Brazing, Vacuum Furnace Brazing, Flame Hardening, Cryogenic Treatments, Hot Forming/Hot sizing, Die Quenching, Hipping, Hardness and Metallography to support the heat treating function
    - **Welding:** Torch/Induction Manual Brazing, Flash Welding, Electron Beam Welding, Fusion Welding, Laser Welding, Resistance Welding, Friction/Inertia Welding, Diffusion Welding, Percussion Stud Welding.
    - **Coatings:** Thermal Spray, Vapor Deposition, Cementation, Stripping, Coating Evaluations, Plating of Coated Parts, Heat Treating of Coatings
    - **Chemical Processing:** Plating, Anodizing, Conversion/Phosphate Coatings, Paint and Dry Film Lubricants, Etch

## 2. Non-Conforming Materials & Notification of Escapement (NoE)

- a. The Seller shall provide notification of any nonconforming material/ parts that have been delivered to Curtiss Wright Sensors-North America. Notification must be received within 48 hours of discovery of the nonconformance. This Notification will include at a minimum
  - i. a clear description of the nonconformance

- ii. the product number (customers where required) and the quantity
- iii. the serial numbers, batch numbers, date of manufacture, as applicable
- iv. delivery date of the product
- v. planned corrective action, with date for completion
- vi. delivery of material or items that are believed to be suspect or nonconforming, or items being returned to Curtiss Wright Sensors-North America unprocessed, must be identified and packaged in such a way to prevent unintentional comingling with acceptable product.

Supplier shall use QF-06000-2 Supplier Deviation Approval Request to obtain approval for deviations prior to delivery. A copy of the approval shall be submitted with the delivery of the product to Curtiss Wright Sensors-North America. Failure to do so may result in product being returned.

Curtiss Wright has implemented a C=0 sampling plan, thus allowing a received manufactured lot to be returned to the supplier if one non-conforming part is detected in the AQL sample.

### 3. Return Material Authorization

- a. Return Material Authorization (RMA) is required to be provided by supplier for material that is defective or considered suspect and needs to be returned to the supplier
- b. Within 3 business days of notification of defective parts, an RMA is required from the supplier. If no RMA is received within 3 business days, the buyer may return the product without the supplier's authorization.
- c. Supplier is responsible to pay for any expenses associated to the return of defective parts such as shipping expenses, customs activities, labor involved, packaging materials, etc.

### 4. Problem Resolution

- a. Supplier Corrective Action Request (SCAR) Process
  - i. Upon discovery of any nonconformance at any stage of the process, Curtiss Wright Sensors - North America may issue a SCAR to the supplier to address root cause and implement corrective action.
  - ii. When Curtiss Wright Sensors-North America issues a Supplier Corrective Action Request (SCAR), suppliers are required to complete the Curtiss Wright provided 8D form and complete within the established due date. It is recommended to use the AS13000 Problem Solving Requirements for Suppliers as guidance.
  - iii. Supplier must provide containment actions within 2 business days. The Root Cause and Corrective Action response must be provided within 10 business days, unless otherwise specified on the 8D. Implementation of the Root Cause and Corrective Action must be completed within 45 calendar days unless an extension is otherwise authorized by the Curtiss Wright Supplier Quality Team. The effectiveness of the implemented corrective actions will be reviewed at a specified date after objective evidence of the corrective action is received and approved.
  - iv. Formal escalation process will be initiated for those SCAR's that are not completed in accordance with the provided due dates. Escalation process for delinquent SCAR's will be shared with both the Curtiss Wright Sensors-North America Management and Supplier Management team.
  - v. Approval and closure of Supplier Corrective Action will be at the discretion of the Curtiss Wright Sensors-North America Supplier Quality Engineer Representative. All

SCARs will remain open until Problem Resolution and Supplier Corrective Action requirements are met.

5. Containment

- a. Suppliers are responsible for developing a process to protect Curtiss Wright Sensors-North America from receiving material that does not meet the quality requirements and specifications set by Curtiss Wright Sensors-North America. Suppliers must include at minimum elements of the following process of containment.
- b. Supplier is responsible to take the actions required to avoid shutdown of Curtiss Wright's production lines and/or affect customer shipments. Curtiss Wright Sensors-North America reserves the right to sort suspect material or rework nonconformance material at supplier expense to avoid shutdown of its production lines. Curtiss Wright Sensors-North America buyers will charge back activities will be done by debit memos sent by Suppliers

6. Controlled Containment

- a. Suppliers will be placed into Controlled Containment as result of Curtiss Wright Sensors-North America or its customers receipt of defective material. Suppliers will be required to take immediate actions to cease shipping of defective material. These actions include:
  - i. Sending 100% certified parts for all shipments to Curtiss Wright Sensors-North America.
  - ii. Marking certified parts as agreed to by Curtiss Wright Sensors-North America.
  - iii. Sending certified replacement parts to replace suspect parts in-transit and in Curtiss Wright Sensors-North America inventory.
  - iv. Utilizing a Certified Part identification label to identify certified shipments.
  - v. Collecting daily sort data and reporting findings to Curtiss Wright Sensors-North America.
- b. Suppliers will be released from Controlled Containment once the CPAR response has been approved.

7. J-STD solderability requirements or equivalent for electrical/mechanical components, wires and PCB/PWB assemblies.

- a. All electronic components and wire subject to solder operations shall have solderability in accordance with J-STD-002 or equivalent.
- b. All printed circuit boards and PCB/PWB assemblies shall have solderability in accordance with J-STD-003 or equivalent.
- c. Suppliers shall provide a certificate with each lot submitted to Curtiss Wright Sensors-North America. The certificate shall be signed and shall specify the part number.
- d. Suppliers shall notify the appropriate Curtiss Wright Sensors-North America buyer, in writing, where evidence or certification of solderability cannot be provided.

8. Serialized Items

- a. The serial number(s) of items supplied on this procurement shall be on Seller's release documentation, (i.e. Certificate of Compliance, test reports, packing list, etc).
- b. Serialization shall be maintained during processing (including traceability). Upon receipt of these items, Curtiss Wright Sensors-North America shall assign a unique batch number to each individual serialized item.



9. Source Control Items where specified by drawing.
  - a. The items procured on this purchase order are Source Control items.
  - b. The following must be provided with each shipment:
    - i. Certification from the manufacturer that the items were actually produced by the designated manufacturer.
    - ii. Certification from the manufacturer that the items conform to the manufacturer's current standards of performance and quality'
    - iii. Certification stating that the distributor can furnish any traceability records or documentation required by the Purchase Order for lot control, testing, etc.
10. Visual Acceptance Criteria
  - a. QP-20020 incorporated by reference defines visual acceptance criteria for product quality.
11. Delivery Requirements
  - a. If a supplier will be unable to deliver product by the required due date, it is the suppliers responsibility to notify Curtiss Wright Sensors-North America as soon as possible.
  - b. On time delivery is defined as follows:
    - Long Island 4 days early and 3 days late
    - Nogales 7 days early and 5 days late
    - Stratford 4 days early and 3 days late
    - Gilbert 4 days early and 3 days late
  - c. Notification to Curtiss Wright Sensors-North America must occur anytime suspect material has been shipped. Suppliers are to notify the Curtiss Wright Sensors-North America Purchasing or Supplier Quality department.
  - d. Material or items that are believed to be suspect or nonconforming, or items being returned to Curtiss Wright Sensors-North America unprocessed, must be identified and packaged in such a way to prevent unintentional comingling with acceptable product.
    - i. Identification may include red tags, bag & tag, or other prominent marking.
    - ii. When possible, suspect, nonconforming, or unprocessed items should be packaged separately.
12. Inspection Tools
  - a. Curtiss-Wright recommends that suppliers implement the 10:1 rule with measurement and inspection tools. This rule of thumb is to multiply the given tolerance range by 10% (or divide by 10) to get the minimum resolution of the measuring device to be used.
13. Contract Review
  - a. The supplier shall review the requirements of a purchase order prior to committing to supply a product to Curtiss-Wright. This review shall ensure that:
    - i. Product requirements are adequately defined.
    - ii. Any special processes are identified.
    - iii. Potential risks have been identified.
  - b. When purchase order requirements are changed, the supplier shall ensure that relevant personnel are made aware of the changed requirements.

#### 14. Sampling Plans

- a. Sampling plans shall be in accordance with the latest revision of ANSI Z1.4 with the implementation of C=0, or lot reject if one defect is found in the sample. The only exception is if an established end customer requirement is noted on the supplier PO in the form of a Product Specific Quality Clauses, refer to the next section. Similar sample plans to ANSI Z1.4 are only allowable with prior written approvals from Curtiss-Wright Quality Assurance management.

#### **Product Specific Quality Clauses**

Product Specific Quality Clauses are item number specific. These will only apply to an item number if listed on the purchase order line.

1. (Q1) Products containing material described in the Defense Federal Acquisition Regulations must be in compliance with DFAR clause 252.225-7009.
2. (Q2) Burr Requirements for machined parts only.
  - a. Any kind of burr, contamination or any other nonconformance can cause the transducer to malfunction and may cause serious catastrophic conditions. Therefore, if it is required by our drawing to:
    - i. "Remove burrs and break sharp edges". This shall be interpreted as no burrs are acceptable and the edges shall be broken to .005 -.010.
    - ii. "Maintain sharp corner". This shall be interpreted as no burrs are acceptable and corners shall not be marred or broken no more than .002 max.
    - iii. Curtiss Wright Sensors-North America drawing notes take precedence over this requirement.
3. (Q3) All processes shall be Parker Approved.
  - a. If the supplier is not approved by Parker or if their approval is not in effect at this time, supplier shall not proceed with the order. Supplier shall contact the Buyer listed on the purchase order.
  - b. Parker's APSL is available at <http://www.parker.com/portal/site/PARKER/menuitem.f830ba32f37af5fe2c5c8810427ad1ca/?vgnextoid=7de94bad565e4310VgnVCM10000014a71dacRCRD&vgnnextfmt=default>
4. (Q4) Removed (see Q10 for reference).
5. (Q5) All processes shall be Eaton Approved.
  - a. If the supplier is not approved by Eaton or if their approval is not in effect at this time, supplier shall not proceed with the order. Supplier shall contact the Buyer listed on the purchase order.
  - b. Eaton's APSL is available at: <http://www.eaton.com/Eaton/ProductsServices/Aerospace/index.htm>
6. (Q6) Removed.

7. (Q7) Drawing Interpretation
  - a. Unless otherwise stated by the drawing (Drawing notes take precedence) the following requirements must be maintained:
    - i. Remove burrs and break sharp edges” this shall be interpreted as no burrs are acceptable and the edges shall be broken .005” max.
    - ii. Maintain sharp corner” this shall be interpreted as absolutely no burrs are acceptable and corners shall be marred or broken no more than .002” max.
8. (Q8) Deburr Process
  - a. The seller shall deburr parts as per Curtiss Wright Sensors-North America Deburring Procedure QUALITY STD#7.
9. (Q9) Flight Safety
  - a. Supplier to state on Certificate of Compliance and all manufacturing documentation
    - i. "FLIGHT SAFETY PART" and "HANDLE AND PACKAGE WITH CARE"
    - ii. \*\*\*FP\*\*\* SYMBOL DENOTES FLIGHT SAFETY CHARACTERISTIC FROZEN PROCESS.
  - b. 100% inspection data is required with all shipments.
  - c. UTAS FPRB (Frozen Process Review Board) are required for all changes.
  - d. UTAS approval required prior to change.
- 10.(Q10) Honeywell Requirements
  - a. **Honeywell Supplemental Purchase Order Conditions (SPOC) Manual applies** to this order. This requirement applies to the supplier and all sub-tier suppliers. Honeywell SPOC Manual is available at <https://www.cw-sensors.com/About/Supply-Chain>
    - i. Supplier is required to comply with Honeywell SPOC Manual sections 1 and 2, and group SPOC 002. (Note: See Section 3.1 of the SPOC Manual for the Group Requirements Table. The table shows the Individual SPOCs invoked by the SPOC group.)
    - ii. Supplier is required to comply with Honeywell SPOC section 419
  - b. **All processes shall be Honeywell Approved (IAW Honeywell SPOC 165).**
    - i. The supplier shall show that they are on the customers approved process list at the time the work is performed. This can be done by sending a copy of the APL with their name and date on the list. If the supplier or sub-tier supplier is not approved by Honeywell or if their approval is not in effect at this time, supplier shall not proceed with the order. Supplier shall contact the Buyer listed on the purchase order.
  - c. **A second hardness test is required** for each raw material heat lot (if no further heat treatment operations are performed) or for each subsequent heat treatment lot when heat treatment is specified on the engineering drawing or material specifications. Supplier is required to provide the result and show proof that a second hardness test was performed. (Note: See SPOC 140, Table II, item 16 for details of the Second Hardness Test Requirement. Contact your Curtiss-Wright SQE or Buyer if you have any questions)
  - d. **A Detail Inspection Plan (DIP) is required for all Honeywell part numbers**, purchased parts and outside processed parts with the exception of Standard, Commercial and Catalog hardware identified as vendor items, or Industry / commercially available hardware AN, MS, AS. The DIP shall define the manufacturing operation at which the characteristic is inspected and the inspection method used, including the type of tooling / gauging instrumentation used. Characteristics that are subject to change after in-process acceptance (e.g., growth,

shrinkage, and/or distortion) must be re-inspected prior to final acceptance. DIPs which contain characteristics which are “tool controlled” (castings, molded parts, etc.) may contain less than 100% of the drawing characteristics provided the following conditions are met: a) a number of characteristics shall be selected as “control” dimensions. Control dimensions shall be of quantity and type such that inspection of these characteristics will give the supplier enough information (based on tool construction, assembly, process variation, and drawing tolerance) to ensure that all other drawing characteristics are in conformance.

**e. Certificate of Conformance Requirements**

- i. Certification of conformance for special processes, shall be sent with any part or material that requires special processing such as plating, non-destructive testing (NDT), welding, anodize, heat treat, and chem. film. At a minimum, certificates shall:
- ii. Be signed by the certificated operator or designee and sent with each shipment.
- iii. List the part number and quantity.
- iv. List the process specification number and revision.
- v. List Curtiss Wright Sensors-North America’s purchase order number with any changes.
- vi. Reference the processors batch/work order number. Each multiple or split lot shall be identified.

**f. Honeywell Subcontracting Policy**

- i. Honeywell suppliers shall ensure flow down to, and compliance with, all applicable Purchase Order and Engineering requirements to their sub-tier suppliers, including approved Special Process providers.
- ii. For Honeywell designed hardware, Supplier/subcontractor Purchase Orders to special processing providers must contain the following as a minimum:
  1. Reference to the applicable Honeywell CAGE Code, or request for material.
  2. Applicable SPOC number(s).
  3. Honeywell part number and nomenclature of subject part.
  4. Special Processes to be performed and the applicable specification(s), revision letter(s) including the type, class, or methods and testing that are required by drawing or specification.
  5. Any special drawing instructions/notes, as applicable, such as approved Materials Engineering Supplier Agreement, inspection class, inspection grade and inspection acceptance requirements, MOT’s, MBP’s, or special handling requirements not otherwise stated, etc.
  6. Fixed / Frozen process revision level and approval date. If not provided on the Honeywell purchase order, contact the Honeywell buyer for proper information to flow down.

- g. The latest revision of Honeywell 41-10748, Workmanship Manual Honeywell Engines, Systems & Services, Tempe applies to this order.** This requirement applies to the supplier and all sub-tier suppliers. Your Curtiss-Wright buyer can provide the latest revision of the Honeywell 41-10748 document.

- 11.(Q11) All processes shall be Boeing Approved.
- If the supplier is not approved by Boeing or if their approval is not in effect at this time, supplier shall not proceed with the order. Supplier shall contact the Buyer listed on the purchase order.
  - Boeing's APSL is available at: <http://active.boeing.com/doingbiz/d14426/GetAllProcessors.cfm>
- 12.(Q12) Removed.
- 13.(Q13) Products must be in compliance with The Buy American Act 41 U.S.C. §§ 8301–8305. Supplier must ensure this requirement is met at the time the purchase order is accepted. Curtiss Wright Sensors-North America buyer may request evidence of compliance .
- 14.(Q14) Removed (see Q10 for reference)
- 15.(Q15) UTAS Supplier Quality System Requirements ASQR-01 applies to this order. This requirement applies to the supplier and all sub-tier suppliers. Refer to the Normative Reference of ASQR-01 to ensure compliance to related documents. The latest revision of the document may be located at <http://www.utc.com/Suppliers/Pages/Aerospace-Supplier-Quality-Requirement-Documents.aspx>
- Includes supplier compliance to the requirements of AS/EN/JISQ9100 and ASQR-01 as defined in ASQR-01 (ASQR-01, 4.1.1).
  - Includes distributors shall be on the UTC Qualified Distributor List or certified to AS/EN/JISQ9100 or AS/EN/JISQ9120 (ASQR-01, 4.1.2).
  - Includes mitigation of counterfeit parts by complying to AS5553 for electronic components and AS6174 for non-electronic product (ASQR-01, 5.1.2).
  - Includes compliance to a documented Work Transfer process and ensure its application in its entire supply chain (ASQR-01, 4.2.3).
- 16.(Q16) UTAS Production Part Approval Process (UPPAP) ASQR-09.2 applies to this order. This requirement applies to the supplier and all sub-tier suppliers. The latest revision of the document may be located at <http://www.utc.com/Suppliers/Pages/Aerospace-Supplier-Quality-Requirement-Documents.aspx>
- 17.(Q17) Reference Latest Moog SQR-1 for Moog Flow down. Pull the latest copy from Moog's supplier portal at <https://www.moog.com/suppliers/information-for-suppliers-shipping-to-the-united-states/information-for-suppliers-shipping-to-the-united-states-aircraft-group.html>  
All processes shall be Moog Approved.
- If the supplier is not approved by Moog or if their approval is not in effect at this time, supplier shall not proceed with the order. Supplier shall contact the Buyer listed on the purchase order.
  - Moog's APSL is available at: <http://www.moog.com/suppliers/asps/>
- 18.(Q18) Removed (see Q10 for reference)
- 19.(Q19) Supplier Sampling Requirements ASQR-20.1 applies to this order. This requirement applies to the supplier and all sub-tier suppliers. The latest revision of the document may be located at <http://www.utc.com/Suppliers/Pages/Aerospace-Supplier-Quality-Requirement-Documents.aspx>
- 20.(Q20) Pratt Whitney Supplier Quality Operating Procedure SQOP-01-01 applies to this order in addition to the ASQR-01 as stated in clause Q15. The SQOP-01-01 defines unique PWC requirements that are in addition to ASQR-01. Your Curtiss-Wright buyer may provide the latest revision of the SQOP-01-01 document.

21. (Q21) Moog Glass Beads - No glass bead processing is to be used on any Moog product. Different types of media blasting may be used, but no glass beads are allowed per Moog flow down SQR-1. See Moog SQR-1 here: <https://www.moog.com/suppliers/information-for-suppliers-shipping-to-the-united-states/information-for-suppliers-shipping-to-the-united-states-aircraft-group.html>
22. (Q22) FAA Advisory Circular 21-55 applies to this order. Curtiss Wright Sensors-North America must be informed if a supplier or sub-tier supplier is located outside the USA. If using a facility outside the USA, the FAA requires notification and approval prior to manufacturing. The supplier shall submit notification to Curtiss Wright Sensors-North America in accordance with AC 21-55, Process to Support FAA Findings of Undue Burden or No Undue Burden for PAHs Requesting to Use a Manufacturing Facility Located Outside of the United States. The submittal form is located in AC 21-55, Appendix A, which is located at: [https://www.faa.gov/regulations\\_policies/advisory\\_circulars](https://www.faa.gov/regulations_policies/advisory_circulars)
23. (Q23) Removed (see Q10 for reference)
24. (Q24) End use of item shall be in compliance with Buy America Act. US based material must be used for processing. Supplier must ensure this requirement is met at the time the purchase order is accepted. Curtiss Wright Sensors-North America buyer may request evidence of compliance.
25. (Q25) This part has a QIP (Quality Inspection Plan) requirement. It is the suppliers responsibility to contact the Curtiss Wright Buyer to get the latest revision. This form shall be populated by the vendor and sent to Curtiss Wright as part of the release documents. The QIP will be used in lieu of the inspection report requirement. The QIP must be stamped, signed and dated to indicate supplier acceptance.
26. (Q26) End item FAIR approval required.
27. (Q27) Airbus Requirement - PPAP submittal Required- PPAP levels are as follows:  
Level 1: FAI and signed Part Submission Warrant, COTS items require C of C only.  
Level 2: FAI, signed Part Submission Warrant, and C of C.  
Level 3: FAI, Part Submission Warrant, C of C, PFMEA, Control Plan, Process flow map, \*Capability study on key characteristics (if applicable), \*Gage R&R for gages that are required to verify key characteristics.(\*if applicable).  
Level 4: Case by case, depending on complexity of product.  
a) CW has an Excel PPAP template for submittals, available upon request, but is not required. Supplier can provide PPAP in their own format, as long as required documents are provided.
28. (Q28) Airbus Requirement - Distributors/Stockist must be certified to AS / EN9120 Aviation Standards for distributors, provide OEM authorization for the sale of product and provide original manufacturers certificate of conformance.
29. (Q29) Airbus Requirement - Customer must approve all sub-tiers. No changes allowed without customer approval.

Quality Systems Procedure  
Curtiss Wright Sensors-North America  
Supplier Quality Manual  
QP-06000, Revision U  
Acknowledgement

Effectivity date is as stated on revision sheet.

This signed document provides Curtiss Wright Sensors - North America with evidence the below mentioned supplier and its authorized representative(s) performed proper and complete documentation review of the above stated QP-06000, Supplier Quality Manual revision.

Any questions or concerns will need to be directed to your Buyer and / or Supplier Quality Engineer.

Supplier Information:

Supplier Name:		Supplier Code:	
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Representative Name (print):		Representative Signature:	
Representative Title:			
Representative Phone:		Representative Email:	







U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Aviation Safety  
Scottsdale Certificate Management Section

Phoenix MIDO Section  
17777 North Perimeter Drive Suite 103  
Scottsdale, AZ 85255

December 11, 2023

Mr. Raul Gonzalez  
Quality Manager  
Curtiss Wright Controls & Integrated Sensing, Inc.  
1150 N. Fiesta Blvd.  
Gilbert, AZ 85233

Dear Mr. Gonzalez:

Notification of Quality System Change Status

The Federal Aviation Administration (FAA) has completed its review and audit of the quality system changes documented in your Quality Manual. Your submitted data meets the intent of title 14, Code of Federal Regulations (14 CFR) 21.308, “Quality manual.” Therefore, the FAA approves the submitted data.

The FAA reserves the right to require changes, additions, and clarifications that may become necessary as a result of subsequent inspections and/or audits.

Name	Document No.	Revision No.	Date
Manufacturing Documentation	MP-09001	P	07/18/2021
Document Control	QP-05003	AC	07/25/2022
ECO Procedure	QP-05008	Y	09/04/2022
Revision and Obsolescing of Records & Documents	QP-05010	G	07/24/2020
Supplier Quality Manual	QP-06000	U	11/27/2023
Traceability Control	QP-08002	K	01/24/2018
Inspection Process	QP-10000	M	03/18/2022
In-Process and First Piece Inspection	QP-10002	L	05/24/2016
First Article Inspection	QP-10006	K	05/15/2017
Inspection Sampling Plans	QP-10010	H	04/18/2018
Dock to Stock	QP-10011	F	01/19/2018
Metrology	QP-11001	AD	07/07/2022
Control of Non-Conforming Product	QP-13001	AE	01/16/2018

Name	Document No.	Revision No.	Date
Material Review Board	QP-13005	J	01/11/2018
Corrective and Preventative Action	QP-14001	AB	08/21/2020
Control of Age Sensitive Material	QP-15001	L	02/09/2017
ESD Control	QP-15003	G	02/28/2018
Material Handling	QP-15004	J	02/06/2018
Control of Records	QP-16001	M	07/19/2016
Internal Audits	QP-17001	AF	09/17/2021
Suspect/Counterfeit Parts Prevention Plan	QP-20010	C	11/13/2017
Approvals, Auditing and Performance Reporting of Suppliers, Recording Inspection Rejects in Syteline	QP-17002	P	11/27/2023

This notification should remain on file as evidence of FAA review of your quality system document.

Sincerely,

Scott Erickson  
Aviation Safety Inspector,  
Scottsdale Certificate Management Section, AIR-871  
West Certificate Management Branch  
System Oversight Division  
Aircraft Certification Service