PMA SUPPLIER QUALITY REQUIREMENTS

QS100.006

Revision P

Wencor, LLC

Corporate Ph. (678) 490-0140

416 Dividend Drive
Peachtree City, GA 30269

3577 S Mountain Vista Parkway
Provo, UT 84606

APPROVAL	NAME
WRITTEN BY:	Lisa McQuillen Quality Engineer
CHECKED BY:	Kevin Cook Director, Technical Purchasing Kevin Cook Kevin Cook (Oct 3, 2025 08:39:25 MDT)
QUALITY:	Chase Harris VP, PMA & DER

REVISION SUMMARY

Revision	Change Description	Rev Date	Approved
A	Initial release.	12/20/11	W. Cunningham
B	See historical files.	4/6/12	W. Cunningham
C	See historical files.	12/7/12	W. Cunningham
D	See historical files.	11/6/13	D. Johnston
E	See DCR 46 as needed.	8/8/14	J. Nelson
F	See DCR 356 as needed.	6/19/15	M. Ginn
G	See DCR 709 as needed.	9/9/15	M. Ginn
H	See DCR 880 as needed.	7/29/2016	M. Ginn
J	See DCR 1249 as needed.	1/2/18	M. Ginn
K	See DCR 1374 as needed.	9/4/18	M. Ginn
L	Added 3.1 step “C”. Moved supplier employee awareness to section 4.4. Changed record retention for Safety Critical parts from 25 to 10 years. Added section 3.4 on counterfeit parts. Added clarification to section 5.2 “Sampling Plan” that a sample may be taken **once processes are stable**. Adjusted the sample size chart for Critical Parts. Added rework orders and RTV form to required certifications in section 5.3. Added clarification to section 5.3.1.1. Added instructions in 8.2 to get Wencor approval on RTV “rework” plan. Other minor formatting and grammatical corrections. See also DCR 1551.	12/23/19	M. Ginn
M	Added to 2.0 “Requirements of a Quality System must be met in compliance to/with 14 CFR 21.137.”, added section 1.1, updated UT address. Added to 4.5, requirement to identify sub-tier suppliers for special processes. Added 3.5, frozen process requirement. DCR 1656	6/25/2020	M. Ginn
N	Adjustments made to table in section 5.3. Made dimensional inspection reports for repeat buys and rework orders required. Added clarity to AS9102 requirement for repeat buys by changing requirement to “As required on AS9102”. Added clarity for what is required on rework orders. DCR 1801	7/20/2021	M. Ginn
P	Updated log, updated Quality block on signature page, Update document to meet HEICO Policy 100.9. Updated FAI section to current requirements. see also DCR 2339	10/3/25	C. Harris

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1.0 Scope

The requirements found herein apply to all orders produced by suppliers of Wencor, LLC for Wencor PMA (cage code 26647 or 0FWK8) or OOP Parts/Assemblies. It is the supplier's responsibility to flow down all applicable sections of this specification to sub-tier suppliers used in the manufacture of the product.

1.1 Definitions

Dimensional Inspection Report – record of dimensional inspections completed on parts throughout the manufacturing process and/or at final inspection confirming conformity to all dimensional design requirements.

FAI – First article inspection in accordance with AS9102. An inspection to verify and validate product realization processes in place are capable of producing characteristics that meet engineering and design requirements. An FAI shall be initiated when any of the events in section f. (1-6) of AS9102 has been identified or as requested by Wencor.

FAIR – First article inspection report. Documented evidence of the FAI comprised of the forms identified in Appendix B of AS9102 and applied to a production lot piece.

Lot – for Wencor purposes, a lot is a unique code representing a specific quantity of product that is received by Wencor in a singular shipment, with a uniquely identifying manufacturing code. This manufacturing code shall be a uniquely identifying code assigned to a specific batch of products made under the same conditions, used for tracking, quality control, and traceability purposes.

NDT – Non-destructive testing. A range of testing and analysis techniques used to evaluate the properties of materials, components, or systems without causing damage to them.

OOP – Owner operator parts. The owner controls the design, manufacture, and quality requirements of parts manufactured

Non-Conformance – a failure to meet the requirements established in Wencor's PO, drawing or other design controlling documents.

SCAR – Supplier Corrective Action Report

Source Inspection – a quality control process where a Wencor representative or delegate visits a supplier or remotely witnesses specific manufacturing processes, functional tests and/or other processes as deemed necessary by Wencor to verify they are meeting design requirements.

Special Process – a process where the resulting output cannot be verified by subsequent monitoring or measurement and is controlled by an industry specification or standard.

Test Report – record of outcomes of testing required in accordance with the drawing, PO, or other design controlling documents that do not fall under special processes or material reports.

Re-work – parts that have been returned to the supplier for rework of non-conformities found. Re-work may only occur after the supplier has received an engineering approved RTV form from Wencor.

RTV Form – Return to Vendor. A Wencor form used by the supplier to ship reworked or replacement parts in response to a non-conformance. Any rework desired to be completed must be signed off by Wencor engineering prior to rework start.

QMS – Quality management system.

1.2 Order of Precedence

In the event of conflicting contractual requirements, the order of precedence is as follows:

A. Purchase Order
B. Engineering Drawing
C. Applicable Engineering Specification
D. QS100.006 PMA Supplier Quality Requirements (this document)

2.0 Quality Management System

The supplier shall maintain a documented QMS that conforms to the latest revision of AS9100 as demonstrated by ANAB-accredited certification or by Wencor assessment. Loss/Suspension of QMS certification shall be communicated within five (5) business days of receiving notification. Requirements of a Quality System must be met in compliance with 14 CFR 21.137.

All requirements herein are subject to Wencor and FAA audit review.

3.0 General

3.1 Communication

The supplier shall notify Wencor (supplierquality@wencor.com) of any significant business changes/events in a timely manner. The notification shall include the effective date with associated details. Examples of required notification include:

A. Change in location of facilities or change in place of manufacturing.
B. Change in ownership, name, senior company management, or change in quality leadership.
C. Changes to processes, products, or services and obtain approval for disposition.
D. Termination of business activity.

3.2 Documentation/Record Requirements

The supplier shall supply documentation as evidence of conformance to the Wencor purchase order requirements for the specific product(s) provided. Quality records shall be in English, complete and fully legible.

- The supplier shall retain Quality Records for a minimum of 7 years.
- The supplier shall retain Critical Safety Parts' Quality Records for a minimum of 10 years.

3.3 Configuration Management

The supplier shall maintain and control all revisions of Wencor purchase orders, drawings and specifications. When a new revision is released, the supplier shall notify all required personnel of the changes, and the old revision destroyed or controlled. The supplier must notify Wencor within 30 days of their ability to meet the requirements of a newly released revision for any product currently under their control at the time of the new release.

Suppliers of source-controlled drawings must alert Wencor of any changes immediately upon drawing release.

3.4 Counterfeit Parts

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

3.5 Fixed or Frozen Manufacturing Process

Fixed or frozen processes may be required. Supplier shall refer to and comply with PS 300.076 *Review and Approval of Fixed or Frozen Manufacturing Processes* when required by the applicable part drawing, test plan, purchase order or within another specification referenced by the part design. When the manufacturing process is frozen, approval is required to be received from Wencor prior to manufacturing start. Changes to the process are required to be approved by Wencor and documented per PS 300.076 before the change is fully implemented and acted upon.

3.6 Drawing Deviations

Deviations from the approved Wencor drawing are strictly prohibited unless prior approval from Wencor engineering is attained and documented on the PO. Wencor shall be alerted to any intended or unintended deviations during the manufacturing process, and all reworking of parts must be approved by Wencor engineering prior to rework initiation.

4.0 Product Realization

Products delivered to Wencor must meet all applicable purchase order, drawing and specification requirements.

4.1 Traceability

Items shall be segregated into unique manufacturing lots and each manufacturing lot shall be clearly identified to maintain lot traceability. The supplier shall package each manufacturing lot ensuring that no mixing of lots occur at any time.

For any split manufacturing lot, traceability to the original lot must be maintained.

Each certificate (dimensional, material, process, etc.) shall be clearly traceable to the Wencor part number and/or purchase order and applicable serial numbers.

4.2 Contract Review

The supplier shall perform and record a thorough contract review that covers (but is not limited to) purchasing, quality, engineering and manufacturing requirements. The supplier shall notify Wencor purchasing for resolution when any requirement is identified that cannot be met.

If an updated drawing and/or specification is sent by Wencor before the delivery or product is made, the supplier must confirm whether they can meet the new requirements.

4.3 Manufacturing Plans (aka Router, Traveler, Control Plan, etc.)

The supplier shall develop/maintain a manufacturing plan which provides evidence that the process was completed in a controlled manner. This plan shall define the steps and processes to be employed in the manufacture of the part/assembly.

All manufacturing plans are subject to Wencor audit review.

4.4 Employee Training

The supplier shall ensure that all personnel performing activities affecting the quality of products/services are trained and competent to perform each process task.

The supplier shall also ensure that people are aware of:

- Their contribution to product or service conformity;

- Their contribution to product safety;
- The importance of ethical behavior.

4.5 Sub-Tier Suppliers

The supplier shall notify Wencor of the intention to use a sub-tier for any manufacturing operation (prior to initiation of work).

The supplier shall approve, manage and monitor sub-tier suppliers ensuring that they comply with the applicable portions of this quality specification. At a minimum, the supplier shall flow down the following portions of this specification:

A. Right of access
B. Record retention
C. Applicable portions of AS9100

The supplier shall utilize NADCAP or Wencor approved sub-tier sources for each special process required by the Wencor design.

The supplier shall identify the sub-tier supplier to Wencor and provide copies of any certifications (e.g. NADCAP, OEM or other) of any sub-tier suppliers used for special processing (prior to initiation of work). Compliance with this requirement is required for any new PMA drawings or designs released after July 1, 2020.

5.0 Lot Inspection at Supplier

5.1 Inspection Requirements

5.1.1 Inspection Tools

The supplier shall utilize measuring instruments that are accurate to $1/10^{th}$ of the specified tolerance ("1:10 Rule"). When $1/10^{th}$ is not possible, the accuracy shall be at least $1/4^{th}$ of the tolerance.

All inspection equipment used for final product acceptance shall be traceable to international or national measurement standards and controlled within a tool calibration system.

5.1.2 Inspection Data Interpretation

If accurate data can be collected one decimal place beyond the tolerance specified by the engineering drawing, that digit is significant and should be used to accept or reject the part. If accurate data can be collected two decimal places beyond the drawing tolerance, that number is rounded into the significant digit (0-4 rounds to zero, 5-9 rounds to one).

5.1.3 Inspection Records

The supplier shall retain inspection records clearly traced to the lot/job number. Inspection records shall contain the following:

A. All dimensional inspection results
B. Part number, lot, and date of inspection.
C. Serialized part information (as applicable).
D. Inspector's name with signature, stamp, or identifying mark (or captured electronically through user controls).

Wencor reserves the right to request inspection data and records for review and retention as needed.

5.1.4 First Article Inspection

The supplier shall complete and submit a FAIR when required by SAE AS9102 or the Wencor purchase order. The first article inspection report shall be completed using the AS9102 format.

Wencor reserves the right to be present at the time of the first article inspection. This includes in-process inspections such as inspection of castings or dimensions before coating.

The supplier shall clearly identify the article (via label, product separation, etc.) on which the FAI was performed.

For all first buy, new supplier and 2-year dormancy FAIs, supplier's must submit one article that is free of coatings, plating, paint, etc. to Wencor for internal FAIR completion. If the article is an assembly, an unassembled piece must be submitted to include all subcomponents.

5.1.5 First Article Inspection Report (FAIR) Requirements

The FAIR shall include:

A. The complete dimensional report (layout) of all features listed on the drawing. Each line item must include the dimension specified on the drawing with the corresponding tolerance, the measurement result, how measured (including gage used), and be traceable to the inspector.
B. The certification for all special features (that are not on the dimensional report), including certifications for all materials and processes.
C. A FAIR for each component part in an assembly.
D. All in-process dimensions or requirements specified by the Wencor drawing. For example: Include values for features noted as "dimensions apply before coating."
E. The inspector's printed name and signature.

5.1.6 Source Inspection

Wencor reserves the right to witness specific manufacturing processes, functional tests and/or other processes as deemed necessary by Wencor to verify they are meeting design requirements.

5.1.7 Hidden Features

If inspection of a feature requires destructive testing, is a hidden feature, or has other significant complications, the supplier must provide acceptable proof - through in process inspections, SPC methods, 3rd part verification, and/or Wencor source inspection - that the feature meets the requirements. For key features which are hidden due to assembly, Wencor may request a disassembled article for internal inspection purposes.

Supplier reporting for hidden features must be included in every certification packet submitted.

5.1.8 Visual Inspection

Obvious blemishes (e.g., stains, discoloration, corrosion, dings, pits, scratches, etc.) are not permitted. Visual inspection shall be performed ensuring compliance with workmanship requirements stated in PS 300.014.

5.1.9 Packaging and Labeling

All parts must be individually packaged unless otherwise stated on the drawing or PO. Parts shall be packaged and labeled in accordance with the Wencor drawing and shall be packaged in a manner to prevent damage during shipping and handling. If the PO or drawing does not call out a labeling requirement, at minimum, all parts must be labeled with Wencor part number and "FAA-PMA" on the

individual packaging's outermost layer.

5.2 Inspection Methods

Each feature is to be inspected according to one of the following three options.

Option 1 – 100% Inspection

The supplier shall inspect 100% of all the characteristics of the product and all parts in the lot.

Option 2 – Statistical Process Control (SPC) Method

The supplier shall meet the minimum requirements below when using SPC.

A. Critical Characteristic ≥ 2.00 Cpk
B. Key/Major Characteristic ≥ 1.67 Cpk
C. Standard Characteristic ≥ 1.33 Cpk
D. If any feature is found to be outside the specification, then 100% inspection and sort is required for the nonconforming feature (C=0)
E. Control charts shall be provided to Wencor on each shipment

Option 3 – Sampling Plan

Once processes are proven stable the supplier may select a random (non-sequential, representative of all parts) sample that meets the minimum sample size identified in the table below. If any feature is found out of tolerance, then 100% inspection and sort is required for the nonconforming feature (C=0). These tables are based on Zero Acceptance Number Sampling Plans, 5th edition, by Nicholas Squeglia.

Non-Critical Parts

	Sample Size with C=0	
Production Size (At time of inspection)	**Minor Characteristic (2.5)**	**Key/Major Characteristic (1.0)**
2-8	5	100%
9-15	5	13
16-25	5	13
26-50	7	13
51-90	11	13
91-150	11	13
151-280	13	29
281-500	16	29
501-1200	19	34
1201-3200	23	42
3201-10000	29	50

Safety Critical Parts

	Sample Size with C=0		
Production Size (At time of inspection)	**Minor Characteristic (1.0)**	**Key/Major Characteristic (0.65)**	**Critical Characteristic**
2-8	100%	100%	100%

9-15	13	100%	100%
16-25	13	20	100%
26-50	13	20	100%
51-90	13	20	100%
91-150	19	20	100%
151-280	29	29	100%
281-500	29	47	100%
501-1200	34	47	100%
1201-3200	42	53	100%
3201-10000	50	68	100%

5.3 Required Certifications

At a minimum, the following are required for each documentation approval request:

Documentation Type	First Buy	Repeat Buy	Rework Orders
Certificate of Conformance	Yes	Yes	Yes
Photos of part marking & labeling	Yes	Yes	Yes
Photos of Packaging	Yes	Yes	Yes
FAI Report (AS9102)	Yes	As required by SAE AS9102 or PO	Yes (2)
Dimensional Inspection Report (4)	Yes	As required on PO	Yes (1)
Material Certs (3)	Yes	Yes	Yes (1)
Special Process Certs (3)	Yes (5)	Yes	Yes (1)
Test Reports (per ATP/DTP or Drawing) (3)	Yes (5)	As required on PO/Dwg	As required on PO/Dwg/RTV form
Sub-tier component/machining C of C	Yes	Yes	Yes (1)
SPC control charts (when inspection Option 2 is used)	Yes	Yes	Yes (1)
Return to Vendor/Debit Memo Form	N/A	N/A	Yes

(1) Only features/characteristics/materials/processes affected by rework are required.
(2) Only if original Order/Buy was a First Buy is an AS9102 required. A delta FAIR/AS9102 addressing features/characteristics/materials/processes affected by rework may be appropriate in this case.
(3) Specification revisions may be required on supplier documentation as required on PO/drawing.
(4) Required with every shipment when hidden features are present – see section 5.1.7
(5) As applies per requirement.

5.3.1 Certificate of Conformance (C of C)

The C of C may be a separate document or included as part of the shipping declaration/packing slip text. The C of C shall contain the following:

A. Supplier name and address
B. Statement that parts conform to the P.O.
C. Wencor P.O. and line-item number (if more than one line)
D. Original manufacturer's name and part number (when the Supplier is not the manufacturer)
E. Wencor part number and revision level
F. Shipped quantity (by lot)
G. Date of shipment and/or date of QA approval
H. Authorized signature of quality representative or company official

I. Supplier job, lot, or equivalent tracking number(s) unique to the production lot and traced through underlying certifications
J. Manufacturing country of origin (if not manufactured in U.S.A.)
K. Applicable serial numbers
L. Date code and shelf life, as applicable
M. DFARS compliance statement, as applicable
N. Specification revisions, as applicable
O. Bearing grade, as applicable

5.3.2 Material and Special Process Certifications

Material/Special Process certifications must meet type, specification, and specification revision level required by the current revision of the Wencor drawing, and/or PO and must list the test results with traceability to the supplier.

All Chemical and Alloy requirements on Wencor drawings will require source (manufacturers – mill) certifications to be included in the Certification packages with traceability through and to the supplier. Lab tests showing the elements meet the requirements of drawing required elements may be accepted in some cases as an alternate to materials manufacturer certs, but they must be clearly identified as independent lab certifications.

As required by the PO, some products may require specification revision levels to be included on the supplier's C of C.

All Process certifications such as Heat Treatments, NDT or Coating applications are to be provided by the processor who performed the process and reflect the specification listed on Wencor drawings. Provide Material certs that pertain to the special process.

Materials/Items that are shelf life limited shall have the following information on the material certificates:

Material or Item	Certification Data required
Elastomers, rubbers, synthetic rubbers	Cure date; batch number; compound or specification
Adhesives, sealants, paints, coatings	Batch date; compound or specification; expiration date
Lubricated bearings or bearing lubricant	Lubrication date; lubrication specification or compound; percent of fill
Miscellaneous item, shelf life limited	Manufacture date; life limiting compound

5.3.3 Non-Destructive Testing (NDT)

The supplier shall provide certification and recorded results for any NDT. Any artifacts from NDT such as x-ray film are to be retained with the quality records for the lot. When NDT is specified on the drawing, the supplier shall inspect and report 100% of the lot.

5.3.4 Gears and Splines

The supplier shall measure and certify all measurements of gears or splines. A copy of the results shall be included with the certification of the lot to include measurement methodology.

6.0 Nonconforming Material

Nonconforming Material must be identified, documented, and segregated to prevent unintended release or use. The supplier shall complete containment activities within 48 hours (2 business days).

6.1 Waiver

The supplier may seek Wencor approval of a contractual nonconformance by completing a Wencor "Supplier Waiver Request" document. Each waiver must specify the affected lot/batch number and quantity. Waivers shall be submitted with every shipment affected. Waivers can be downloaded using the following link: https://www.wencor.com/wp-content/uploads/2024/11/WQAF-14-03-02-Supplier-Waiver-Request-Rev-F.doc.

A. Waiver requests are P.O. and lot specific and pertain to the features/conditions identified
B. Handwritten, lined-out, initialed, verbal and/or email authorizations are not permitted to any Wencor requirement including purchase orders, drawings/specification or technical data
C. An approved waiver shall be identified by Wencor authorized signatures
D. Segregate the waived items into a separate lot
E. Include a copy of the approved waiver form with the shipment
F. As applicable, document a root cause and corrective action process

7.0 Documentation Approval Prior to Shipment

The supplier shall submit full certification, FAI (as required), and pack/shipping documents to Wencor for approval prior to shipment by emailing the full documentation package to pmaquality@wencor.com. If the certification package is too large to deliver through email, an OwnCloud (Cloud Storage Folder) link and password may be requested through supplierquality@wencor.com.

Upon approval, a shipment approval form (WQAF-04-13-01) will be returned to the supplier. The supplier shall include the shipment approval form (WQAF-04-13-01) with part shipment.

Wencor is allowed forty-eight (48) hours for processing and approval; however, any discrepancies identified may result in delays with approval. The supplier shall correct all such discrepancies before approval may be granted.

Approval does not absolve supplier of meeting all requirements laid out in this document, the PO, drawing, and/or any other specifications associated with the drawing or PO.

Document submissions shall be complete, in English, fully legible, and accurate. Repeated discrepancies in submission(s) may lead to non-conformances and/or SCARs being issued.

Documentation submission must include photos of part marking, labeling, and method(s) of packaging (internal and external).

8.0 Post Shipment Activities

8.1 Supplier Notification of Escape

When an escape of nonconforming material has been identified, the supplier shall notify Wencor within 1 business day. Notification shall include P/N's, traceability (lot, serial, and manufacturer numbers), ship dates, quantities and a description on the nonconformance.

8.2 Return To Vendor (RTV)

When the Wencor Material Review Board (MRB) dispositions parts as RTV, the parts will be returned to the supplier to either be reworked or scrapped at the supplier's location. Wencor purchasing will be the main point of contact for all RTV correspondence and will arrange financial, shipping, and RMA (Return Materials Authorization) details.

If rework is to be performed the supplier must fill out the applicable section of the *Return to Vendor-Debit Memo Form PMA* and return it to supplierquality@wencor.com for Wencor engineering approval. Approval is required before rework can begin.

When parts are ready to ship back to Wencor, the RTV form, along with all original and/or updated documentation, must be resubmitted through the pre-approval process (see Section 7.0 Documentation Approval Prior to Shipment). Once approval has been granted, parts may be shipped back to Wencor with the pre-approval shipment form, RTV form, and full certification packet.

8.3 Supplier Disputes

To dispute a Wencor rejection, the supplier must coordinate with their Supplier Quality Representative to initiate a dispute and will be required to submit Wencor form WPPF-01-01-01 *Supplier Nonconformance Dispute*.

8.4 Supplier Corrective Action Report (SCAR)

The supplier may be required to complete a SCAR for any quality or on-time delivery issue. The supplier shall respond within 30 days unless otherwise notified. The SCAR may be completed on the Wencor SCAR form or the supplier's format but must contain at least the following elements:

A. Short-term containment plan
B. Root cause analysis
C. Long term corrections
D. Verification of implementation and effectiveness