

Blue Origin Purchase Order Quality Requirements

Unless otherwise defined herein, all capitalized, undefined terms will have the same meaning as used in the Purchase Order to which this document is incorporated by reference and hyperlink.

This document includes the following sections:

Part I – General Quality Requirements.

The quality requirements in Part I of this document apply to all Purchase Orders.

Part II – Purchase Order Quality Clauses.

These requirements are applicable if noted on the face of the Purchase Order or any individual line items.

Part III – Nonconformance Reporting for Disclosure of Nonconforming Product.

Sample forms needed for disclosing Product nonconformance in accordance with Part I section F, *Disclosure of Nonconforming Product*.

Part IV – First Article Inspection Documentation Requirements.

Examples and explanations of Purchaser's requirements for completing First Article Inspection Reports to satisfy Quality Clause QC-005 (ref. Part II).

Part V – List of Blue Origin Special Processes and Equivalent Nadcap Codes.

This section describes the manufacturing processes that the Purchaser requires approval by either Purchaser's Materials and Process Engineers, Supplier Quality Engineers or Nadcap accreditation when used to produce qualification or Production Release parts and assemblies.

Part I. General Quality Requirements

A. Supplier's Quality System. Supplier must maintain during the performance of this Purchase Order, a quality system that ensures all goods and services conform to the requirements of this Purchase Order, whether manufactured or processed by Supplier or procured from Supplier's sub-tier suppliers. Supplier's quality system is subject to Purchaser review. Additional Quality Management System standards may be required as noted in the Purchase Order through the application of Quality Clause QC-031.

B. Change in Manufacturing Location Notification. Supplier shall notify the Procurement Representative in writing, at least 90 days in advance of any changes to manufacturing location. Supplier shall include as a minimum, in the written notification:

- i. Purpose of the relocation
- ii. Address of the new location(s)
- iii. Assessment of actual or potential impact to current PO's
- iv. Risk mitigation plan to ensure compliance to existing requirements
- v. Plan defining the identification, storage, protection, retrieval and retention of records
- vi. Schedule and timeline of relocation activities
- vii. Relocation Coordinator/Point of Contact

C. Access to Facilities and Records. With reasonable advance notice and at no additional charge, Supplier must grant right of access to Purchaser, Purchaser's customers, and any regulatory authorities to the areas of facilities and sub-tier supplier locations that are involved in manufacturing or production of Products. The rights herein also include the right to conduct a survey, audit, or assessment of the facilities, quality systems, and manufacturing records. Supplier will flow this right of access requirement to sub-tier supplier locations.

D. Quality Records. Supplier must retain all records that provide evidence of conformance to specified Purchase Order requirements for a period of not less than ten (10) years after final payment or as otherwise specified in flow down from Purchaser's customer contract. If Supplier is not the original fabricator, processor, or assembly source of the Product, Supplier must obtain and maintain sub-tier supplier documentation on file for the same retention period. Supplier must contact Purchaser prior to destruction of any records.

E. Corrective Action/Preventive Action. Supplier must investigate material and documentation nonconformities communicated by Purchaser to determine root cause(s) of failures and take action(s) as appropriate to correct and prevent future failures. Supplier corrective action(s) may be documented in the Supplier's format. Supplier must acknowledge and respond within the timeframe set forth in such notifications.

F. Disclosure of Nonconforming Product. Nonconforming shipments are prohibited without prior written approval from the Procurement Representative. If Supplier discovers a nonconformance affecting a Product or a Product's performance prior to shipment, Supplier must submit a written request to the Procurement Representative for a conformance waiver. A blank Supplier Nonconformance Report can be found in Part III of this document. If Supplier suspects (or is aware) that an undocumented nonconformance has been shipped to Purchaser, Supplier must notify the Procurement Representative of the condition in writing within three (3) business days of the discovery. Supplier must promptly notify Purchaser if Supplier becomes aware or reasonably

suspects that any Product is, or contains a component that is, subject to a recall notice, warning alert, Government-Industry Data Exchange Program (GIDEP) Alert, or any other type of notification or concern regarding Product authenticity, quality, safety, process integrity, or specification compliance.

G. Resubmittal of Product. Any Product rejected by Purchaser, or any other entity, and subsequently submitted to Purchaser must be clearly identified as a resubmitted Product. Supplier's shipping document must contain a statement that identifies the shipment as containing Products that Purchaser has returned for authorized rework or repairs and will refer to the applicable rejection document(s).

H. Counterfeit Parts. Supplier represents and warrants that it has (and will maintain for the duration of performance of this Purchase Order) a counterfeit parts avoidance, detection, mitigation, and disposition program plan using acceptable standards such as AS5553 for electronic parts and AS6174 for all other material. Supplier will only deliver authentic components, devices, pieces, material, modules, assemblies, subassemblies, goods, or other items that are manufactured by or obtained from original equipment manufacturers, original component manufacturers or authorized distributors. Supplier must make available to Purchaser documentation that authenticates and provides traceability of the parts to the applicable original equipment/component manufacturers.

I. Foreign Object Debris or Damage (FOD). Supplier represents and warrants that it has (and will maintain for the duration of performance of this Purchase Order) an effective foreign object debris or damage prevention program for manufacturing areas which effectively prevents the introduction of foreign objects into any item delivered under a Purchase Order. Guidance can be found in the following standards: AS9146 (preferred), National Aerospace Standard 412 (NAS 412), IPC J-STD-001 or IPC WP-116.

J. Substantiation of Purchase Order Requirements. Supplier is responsible for performing or ensuring completion of all inspections, tests, calibrations, or other items necessary to substantiate that the Products conform to the requirements of this Purchase Order.

K. Shipping Documentation. If Supplier is a distributor or other than the manufacturer of the Product, the manufacturer's name and location (city and state) must be identified within Supplier's shipping documentation. Purchaser may refuse to accept Product not supplemented by required documentation.

L. Sub-Tier Suppliers. If any Products applicable to this Purchase Order are procured by the Supplier from sub-tier suppliers, the Supplier agrees to flow the requirements of this Purchase Order (including all applicable quality requirements) to the sub-tier suppliers that are necessary to ensure Product conformance.

M. Calibrated Inspection Instrumentation. The Supplier must perform all inspections and tests for conformance to design criteria using calibrated equipment that has a sensitivity level capable of detecting defects against the design requirements. For calibration service providers or test laboratories, accreditation to ISO 17025 is preferred.



Part II. Purchase Order Quality Clauses (applicable if noted on the face of this Purchase Order or any line items).

Notes:

1. **The asterisk shown on selected Quality Clause titles below are for Blue Origin internal use only.**
2. **Any changes or updates to the Quality Clauses shown on the Purchase Order must be made through a formal Purchase Order update. Clause changes coordinated verbally or via email are not acceptable.**

In addition to the general quality requirements in Part I, the quality clauses below are applicable to this Purchase Order if listed on a Purchase Order line item. Contact the Procurement Representative for questions or clarification regarding the requirements of this Purchase Order (quality related or otherwise).

All items noted as "Deliverable Data" require documented evidence of conformance to the clause language be included with the shipping documentation.

QC-001* Deliverable Data: Certificate of Conformance. A certificate of conformance from the supplier receiving this Purchase Order must accompany all shipments stating that the Product is in conformance with all Purchase Order requirements and must contain the information noted below.

- A. Supplier's full name and address
- B. Purchase Order number, revision, and Purchase Order line number
- C. Purchased part number and drawing revision
- D. Serial numbers (as applicable)
- E. Heat, lot number, date code, job tracking number (as applicable)
- F. Quantity shipped
- G. Reference to the completed First Article Inspection Report number and date or leave blank if not required. Reference QC-005 for applicability.
- H. List all approved nonconformances including dispositions of Use as is, Repair or Specification Limited Rework (e.g. welds, PCBAs)
- I. Authorized quality representative signature, title, and date

Shipments with multiple line items from the same PO can be listed on one certificate provided that there is clear line item and quantity traceability.

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QC-003* Parts Substitution. Part substitutions that are not approved by the drawing or specification are not authorized unless a Procurement Representative has approved them in writing. The Supplier must notify the Procurement Representative of any end of life, obsolete or fit, form or function issues.

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QC-005 Deliverable Data: First Article Inspection. First Article Inspections must be performed by the Supplier on a representative part from the supplier's first production run. First article inspections are

not required for Ground use hardware (*i.e. tooling and ground support equipment*), Research or Development parts unless specifically noted on the Purchase order.

First Article Inspection reports must be completed in accordance with the latest revision of Aerospace Standard AS9102. If a First Article Inspection is required on other than a Production part, a note will be included on the Purchase Order (e.g. *FAI required for this non-production part*). If unclear about whether the part requires a First Article Inspection, contact the Procurement Representative or Supplier Quality Representative prior to the start of manufacture. Supplier must utilize the current AS9102 forms, or equivalent.

For additional Supplier requirements for completing First Article Inspection documentation, reference Part IV of this document.

Supplier must perform a new first article inspection on a representative part of the first production run or when there are any changes or deviations as defined in AS9102 that require a full or partial first article inspection.

The completed First Article Inspection Report (full or partial) must accompany the Product on which the first article inspection was performed when shipped to Purchaser. Once the complete First Article Inspection Report has been sent in with the shipment it was performed on, only a reference to it on the Certificate of Conformance is needed for future shipments. Refer to QC-001, item G.

When the end item deliverable for this Purchase Order is software or includes embedded software, the Supplier must account for the software testing, installation, and configuration verification within the first article inspection documentation.

This clause is not applicable for standard catalog, military standard, or commercial off-the-shelf parts/assemblies.

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QC-007 Deliverable Data: Nondestructive Test Report. The Supplier must provide nondestructive test reports for each item within each shipment for any testing required by this Purchase Order or as required by the drawing or specification.

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QC-009 Deliverable Data: Material Property Test Report or Material Certification. The Supplier must provide all material property test reports or material certifications as required by the engineering drawing, referenced specification or component specific criteria for each material lot. This includes reports and certifications when the material is purchased from a sub-tier. Material test reports or certification data is not required for COTS parts or Blue Origin furnished material.

QC-010 Deliverable Data: Acceptance Test Procedures. As required by this Purchase Order (including but not limited to the drawing, statement of work, specification, or other exhibit to this Purchase Order), the Supplier must generate an acceptance test procedure and report for final acceptance testing to include any revision of the acceptance test procedure, as well as test programs, software, and hardware. The acceptance test procedure must include equipment lists, equipment calibration status, and test procedure and data sheet(s) necessary to verify the functional requirements, weight, and outline of dimensions required by the equipment specification. This acceptance test procedure and any subsequent changes must be submitted in advance and approved by the Procurement

Representative prior to testing deliverable end items. The Supplier must provide a final acceptance test report for each item within each shipment in a format approved by the Purchaser's representative.

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QC-014 Deliverable Data: Harness. The Supplier must capture images showing the fabrication condition of the harness(es) of the following if applicable to the build: wire termination and connection of connector before installation of back shell or boot, Teflon film applied to cables/wires before EMI over braid, and depth of potting material in back shell. Images must be at least 300 pixels per inch and to be submitted to Purchaser with the shipment.

QC-015 Nondestructive Test Techniques. Each nondestructive test technique must be approved by a Purchaser Level 3 nondestructive test engineer prior to performing the respective process. The approved testing supplier must submit their test technique on their form for approval through to the Procurement Representative. Part number specific test techniques must be submitted for Purchaser review and approval at each drawing revision or controlled by the applicable process specification. Additional information may be requested for the approval.

QC-016 Deliverable Data: 100% Dimensional Inspection. The Supplier must submit an inspection report showing 100% of all features with explicit geometric requirements including those features that are detailed in notes for each part delivered. Serial numbers and/or lot codes must be referenced on the inspection documentation. An AS9102 Form 3 or equivalent may be utilized for reporting purposes.

QC-017 Fixed Processes. The parts or processes on this Purchase Order are considered critical for Purchaser applications and require strict control of manufacturing and processing operations. All planning documentation such as manufacturing plans, processing plans, inspection check sheets, shop travelers, routers, flow process diagrams, operations sheets, operation sketches, computerized numerical control programs, outside process procedures, material or sources, and any other documents necessary to manufacture the part (or process) must be fixed.

The Supplier must furnish copies of their manufacturing and processing routing sheets to be used during production. Upon Purchaser's review and approval of the manufacturing and processing operations documentation, the Supplier's manufacturing and process planning will be considered as "fixed".

After Purchaser has approved a fixed process, additional changes to that process are prohibited unless prior written approval is provided by the Procurement Representative. If written approval is provided, the Supplier must also furnish a revised First Article Inspection Report reflecting the Product conformance as a result of changes in with the next delivery of Products. Minor revisions that do not require submittal for approval are:

- A. typographical corrections
- B. changes to sub-tier suppliers when not specified or controlled

Documentation must be identified as "FIXED PLANNING", controlled in a process control document or similar control document, and include a revision list containing the details of all changes.

Supplier will notify Purchaser in writing three (3) months prior to relocation of any production, manufacturing, or processing facilities that affect the supply of the Products subject to this clause. Purchaser will have the opportunity to qualify the purchased or produced Products in the new location or qualify the source of the new Products.

QC-018 Deliverable Software or Complex Electronic Hardware. For deliverable software or complex electronic hardware installed in a safety critical system, Supplier must define, implement, and maintain a quality system or quality plan that defines quality planning, processes, and metrics to ensure software and complex electronic hardware development requirements are met. Supplier's quality management system or quality plan must meet AS9115 and as applicable the following industry standards:

- A. DO-178C if supplying deliverable software
- B. DO-254 if supplying complex electronic hardware
- C. or Purchaser approved alternate means of compliance with an equivalent level of safety to DO-178C and DO-254

QC-019 Deliverable Data: End Item Data Package. The Supplier must provide an end item data package for Product final acceptance and with the shipment. It must include at a minimum the following (when applicable):

- A. Supplier's certificate of conformance
- B. Certificate of conformance from sub-tier suppliers which contain the sub-tier suppliers name, location, contract number, part number and revision, and serial number
- C. Specification or drawing (or both if each are applicable to this Purchase Order) number and revision
- D. As-built configuration, including a parts list identifying all part numbers, revision, serial numbers (when required), lot numbers, quantities, manufacturer, consumed materials, and life limiting information such as shelf life or number of cycles
- E. Proof of conformance to defined characteristics and source traceability of the raw material (including but not limited to serial number, lot number, batch number, heat lot, country of origin) and any applicable requirements imposed by drawing, specification standards, or this Purchase Order
- F. Incorporated engineering change notices
- G. Type of inspection performed, equipment calibration log, and recorded results
- H. All acceptance or qualification test data and reports
- I. Total quantity of items tested, quantity of items accepted, and quantity of items rejected
- J. Recorded part mass
- K. Applicable Government-Industry Data Exchange Program (GIDEP) alerts, waivers, deviations, and incident reports

Purchaser will refuse to accept the item if the Supplier fails to submit certifications, documentation, test data, or reports required by this Purchase Order. Documentation will include evidence of Purchaser's source inspection (if such source inspection is performed).

Written approval must be obtained from Purchaser for any deviations to the end item data package.

QC-020* Material Review Authority. The Supplier (including any sub-tier suppliers) do not have authority to process use-as-is, repair, or standard repair procedures via their material review board for Purchaser Product without notifying Purchaser in writing of the nonconformance and receiving Purchaser approval and disposition instructions.

When a nonconformance is discovered, the Supplier must notify the Procurement Representative with the relevant information via Purchaser's supplier waiver request form or equivalent. Reference Part III of this document for a sample Supplier Nonconformance Report. Purchaser will perform the material review board review consistent with Purchaser's internal processes and procedures. Depending on the risk of the Product and the operating environment, Purchaser may authorize Material Review Authority to the Supplier.

Note: If the affected product is a Supplier's design specific to Blue Origin requirements including modified commercial-off-the-shelf-items, the supplier must submit a waiver request as outlined above.

Nonconforming Purchaser designed Product may be dispositioned as use-as-is or repair, after review and authorization from the appropriate Purchaser Responsible Engineer (or designee) and Quality representative. The repair process should be approved in writing by the Responsible Engineer (or designee) prior to implementation.

The Procurement Representative will notify the Supplier of the material review board disposition and next steps. The Procurement Representative must be notified and approve any shipment of nonconforming Products.

This material review board authority requirement is not applicable to unmodified commercial-off-the-shelf Products or Supplier designed hardware where no Purchaser design requirements have been contractually provided.

QC-021 Electronic Data Transmission. In addition to the supplier sending physical deliverable data items with the shipment, the Supplier must communicate all data and documentation as specified by general notes, quality clauses, and other required documentation electronically. Documents must be sent via one or more of the following electronic methods:

- A. The Blue Origin Coupa Supplier Portal
- B. Purchaser authorized secure file transfer protocol digital access site
- C. Email to the Procurement Representative with Purchaser Purchase Order number in the subject line. Files should be named as follows: "Part Number_PO Number" (example: 123-034-02_PO1234). Supplier must attach to the email an individual file for each line item. Documents corresponding to that line item must be submitted via portable document format. Note that all information restricted by the International Traffic in Arms Regulations of the United States must be encrypted and the password supplied separately

QC-022 Change Control Requirements. For Purchaser Designed Products and Class 1 Changes:

Purchaser defines Class 1 changes as changes that are non-interchangeable and disrupt backward compatibility including but not limited to fit, form, or function.

The Supplier or sub-tier supplier will not incorporate changes to design, material, part, process, procedure, tooling or test equipment without prior written approval through the Procurement Representative for changes to Purchaser designed products or for Class 1 changes.

For Supplier design authority, commercial-off-the-shelf products, and Class 2 Changes:

Purchaser defines Class 2 changes as changes that are interchangeable in all applications.

Supplier must provide notification prior to implementation of changes via a product change notice or some other communication method for review and concurrence of the change classification. These notifications must be submitted through the Procurement Representative as the Supplier becomes aware of the change.

Risk Notification – Product Alerts: Purchaser must be promptly notified whenever the Supplier becomes aware or reasonably suspects that any Product delivered to Purchaser is, or contains a component that is, subject to a recall notice, warning alert, Government-Industry Data Exchange Program Alert, or any other type of notification or concern regarding Product authenticity, quality, safety, process integrity, and/or specification compliance.

QC-023 Deliverable Data: Shelf Life or Temperature Sensitive Materials. When materials delivered under this Purchase Order are temperature controlled, shelf life sensitive, or perishable, the Supplier must provide certifications for temperature, perishable and age sensitive materials (including but not limited to epoxies, paints, bonding agents, prepregs, adhesives), which reflect date of manufacture, date of test, shelf life, expiration date, and storage temperature as it applies to each lot or batch. Container labels must also reflect applicable lot or batch numbers, storage temperature, expiration date, and date of shipment.

Product delivered to Purchaser must have a minimum of 80% remaining of shelf life upon receipt, unless approved by Purchaser in advance.

When temperature controlled (or time and temperature controlled) material is involved, the Supplier must provide material packaging suitable to maintain proper temperature during transportation from their facility to Purchaser. The Supplier must provide the necessary temperature measuring equipment to monitor the material during transportation to assure compliance to the specifications of this Purchase Order.

QC-024 Manufacturing Software. Any software used for manufacturing of hardware or software deliverables, including firmware, must have a system for control including procedures, records, and revisions available for Purchaser review upon request.

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QC-026 Deliverable Data: Report of Specific Design Characteristics. The Supplier must inspect, record, and provide a report of design characteristics for each attribute or feature that is required within the notes in this Purchase Order. If no specific design characteristic reporting requirements are specified within a note on the Purchase Order, no reporting is required. The inspection report must be submitted as part of the documentation package accompanying each part within each shipment. Unless otherwise specified, serial numbers or lot codes (or both if each exist) must be

referenced on the inspection documentation. AS9102 Form 3 or equivalent (as determined in Purchaser's sole discretion) may be utilized.

QC-027 (Blank) Intentionally left blank.

QC-028 Sampling Inspection Approval. Sampling inspection utilized during performance of this order requires Purchaser's approval. Prior to use, the sampling plan must be submitted and approved by the Procurement Representative. A Purchaser quality engineering representative will evaluate the risk and determine the appropriate acceptance requirements. The use of sampling inspection has no effect on Purchaser's right to reject any unit(s) of Product found defective.

QC-029* Deliverable Data: Special Processes. As applicable, all special processes as identified by Purchaser or this Purchase Order for Production Release drawings or Flight designated parts require Nadcap accreditation or approval in writing by Purchaser. Reference Part V of this document for a list of special processes requiring Nadcap or Purchaser approval. Supplier must certify that special processes have been performed by approved processors by submitting a separate certifications document or noting on the Certificate of Conformance with each shipment and include the process specification and revision level.

Prior to selecting or using a Nadcap accredited, or Purchaser approved special process supplier, the Supplier (including any sub-tier suppliers) must contact the selected special process supplier and confirm that they currently perform the specific type, class, method, or others per the associated drawing requirements.

Supplier must notify the Procurement Representative within three (3) business days of receiving information related to the suspension or disapproval of the Supplier's (including any sub-tier supplier's) special process approval by their accreditation body. Supplier must also notify Purchaser of any Product delivered to Purchaser during the period of any such suspension or disapproval.

If the shipment contains multiple special processed lots within each manufactured lot, each processed lot must be segregated and identified to maintain complete traceability in each shipment. (Example: When a manufacturing work order is split into two separate heat-treated lots, each heat-treated lot must be segregated and identified to maintain traceability in the shipment.) Also, refer to QC-034 Traceability for additional requirements.

QC-030* Source Inspection. Purchaser source inspection must be performed as specified in this Purchase Order (in-process, final, or both). If no specific in-process inspection points are noted within this Purchase Order, only the end item will be inspected prior to final packaging and delivery. Source inspection cannot be waved through verbal or email coordination and must be done through a Purchase Order update to remove this clause.

Components requiring precision cleaning must have an in-process inspection performed prior to cleaning that must include all requirements and documentation available to that point of completion. Supplier must notify Purchaser of the need for an inspection prior to cleaning as noted on the Purchase Order. The Purchaser or Purchaser's contractor will perform inspections, review documentation and provide completed source approval checklist with comment noting

that the subject part(s) are approved less the CMSP-02292 cleaning requirements. Final inspection may be completed by Purchaser via a remote digital review of the remaining steps after cleaning, bagging and sealing. Supplier must include a reference to cleaning per CMSP-02292 on the supplier's Certificate of Conformance.

Supplier must notify Purchaser at least five (5) business days in advance of any proposed source inspection. Purchaser source inspection does not preclude subsequent inspection, nor does it relieve the Supplier of the responsibility to provide acceptable Product. Source inspections may include Purchaser personnel or contractors in addition to Purchaser customer representatives and/or regulatory authorities.

Supplier must include a copy of the Purchaser's completed Source Inspection checklist with the shipping documentation package that accompanies the parts.

QC-031* Quality Management System. Supplier must maintain a quality management system conforming to the requirements of the elements described in AS9100, AS9120, or ISO9001. Purchaser's quality representatives may accept a third-party certification by an accredited registrar. When the Supplier holds a third-party certification and utilizes a subordinate manufacturing or distribution location(s) for shipment of products to this Purchase Order, the subordinate location must be within the Supplier's organizational control and must hold an separate AS9100, AS9120 or ISO9001 certificate.

During the performance of this Purchase Order, the Supplier's quality management system is subject to review and approval by Purchaser whether or not the Supplier holds a third-party certification. If a Supplier declares system compliance to AS9100, AS9120, or ISO9001 with no formal accredited registrar, Purchaser may review the system to verify compliance.

Supplier must notify the Procurement Representative within three (3) business days of any suspension or disapproval of the Supplier's quality management system by their certification body. Supplier must also notify Purchaser of any work delivered to Purchaser during the period of any such suspension or disapproval. In addition, notification is required prior to a change in the manager of the Supplier's quality management system.

Purchaser issued corrective action request history and the Supplier's quality performance data may be provided to the Supplier's quality management system certification body by Purchaser to provide awareness and influence of audit planning activities for the Supplier's quality management system. Purchaser reserves the right to suspend or disapprove a Supplier's status within Purchaser's approved supplier list when corrective action requests are not responded to (or in the case they prove to be ineffective), or in the event of repetitive Product nonconformance. If Purchaser changes Supplier's approval status, Supplier will schedule a short-notice supplemental audit with its quality management system certification body that will include an investigation of any processes associated with nonconforming Product.

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QC-034* Traceability. Each manufacturer's lot within each shipment must be segregated and identified to include the quantity and lot number on each certificate of conformance. There must be a clear chain of custody (including but not limited to heat number, lot number, and batch number to the extent applicable to this Purchase Order) that links the entire certification package of the shipment together. This includes special process certifications performed by Supplier's sub-tier suppliers.

- A. **Deliverable Data:** When materials delivered under this Purchase Order are commercial-off-the-shelf parts, the Supplier must provide the manufacturer certificate of conformance to accompany all shipments.
- B. Raw material provided to Purchaser must include lot, heat lot, batch number, and other items as applicable, and origin of manufacture. Castings and forgings that are provided to Purchaser must also include lot, heat lot, batch number, and other items as applicable for the raw material used and origin of manufacture.
- C. Components/assemblies must include the original manufacturer's part number, lot number, and date code.
- D. Traceability data for electronics, electrical parts, raw material, and mechanical parts included in components or assemblies must be readily retrievable and provided to Purchaser upon request.
- E. Distributors or sellers other than original manufacturers must maintain clear traceability to the original manufacturer for each lot in a shipment.

QC-035 Assembly Review. Purchaser assembly review must be performed as specified (including in-process, or final, or both) in this Purchase Order. Please notify Purchaser ten (10) business days prior to the shipment of end deliverables for the option to complete an on-site or virtual review by Purchaser.

Examples of the types of items that Purchaser may review:

- A. Completeness of assembly procedures
- B. Process records showing compliance to requirements
- C. Installation or assembly witness photos and signoffs
- D. Approved redlines or blacklines
- E. Known configuration, traceability of assembled hardware to build
- F. Other observations – facilities cleanliness, storage, handling, or other items

A Purchaser assembly review acceptance does not preclude subsequent inspection, nor does it relieve the Supplier of the responsibility to provide acceptable Product. Assembly reviews may include the following individuals or entities (in any combination): regulatory authorities, Purchaser personnel, Purchaser contractors, and Purchaser customer representatives.

QC-036 Electrostatic Discharge Control. The Supplier must maintain a documented electrostatic discharge control program. All control program elements for electrostatic sensitive devices must be in compliance with American National Standards Institute or electrostatic discharge standard S20.20-2007 Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices), and include (but are not limited to) documentation of employee training, recertification, and record keeping. Additional elements of electrostatic discharge controls may be listed in any combination of the following documents associated with this Purchase Order: Purchaser Order notes, statement of work, drawings, specifications, or other exhibits.

QC-037 Deliverable Data: Spaceflight Fastener Requirements. Supplier must ensure that all spaceflight fasteners (installed, uninstalled, or both) provided to Purchaser meet the requirements of NASA-STD-8739.14 (supersedes NASA-STD-6008). Supplier must include a certification document stating that the delivered spaceflight fasteners comply with the requirements of NASA-STD-8739.14.

QC-038 Deliverable Data: Instrumentation Calibration. Instrumentation calibration must be performed by the original equipment manufacturer with AS9100 accreditation or a third-party supplier with ISO 17025 accreditation. Otherwise, Purchaser, in its sole discretion, may approve an uncertainty summary that conforms to the National Conference of Standards Laboratory/American National Standards Institute Z540.3.

Purchaser must be notified prior to shipping or returning the instrument if a minimum test accuracy ratio of 4 to 1 is not achieved.

The Supplier must provide a copy of the calibration reports for each item (by serial number) with each shipment.

The calibration report must include:

- A. Part number
- B. Serial number
- C. Measurement uncertainty
- D. Environmental conditions
- E. Traceability for standards used during calibration
- F. Name or unique identifier of the person performing calibration
- G. Date of issue on the report
- H. Date of calibration performance
- I. As found (if applicable) and as left data to be included
- J. Confirmation that no oil use nor any equipment that has been in contact with oil for pressure calibrations. Supplier must use only gaseous nitrogen for pressure calibrations.

QC-039 Weld Process Approval. Each weld procedure schedule, procedure qualification report, and welder performance qualification must be approved by a Purchaser weld or materials process engineering representative prior to performing the respective process. The Supplier or approved sub-tier supplier must submit their weld procedure schedule, procedure qualification report, and welder performance qualification (Supplier's forms may be used) to the Procurement Representative for approval. All part number specific weld procedure schedules and procedure qualification reports must be reviewed and approved by Purchaser at each drawing revision. Purchaser may require additional information in connection with these documents prior to granting Supplier approval.

QC-040 Deliverable Data: Part or Component Reliability Data. The supplier must submit with each shipment, any available reliability data for the parts or components where this clause is applied. This reliability data shall be labeled and included with the supplier's end item shipping documentation package. Typical component reliability data includes:

- A. Applicable part number(s)
- B. Expected failure modes and mechanisms
- C. Failure rate (fph, FITS, MTBF, etc.)

- D. Part life (L10, characteristic life, etc.)
- E. Prediction models and model parameters
- F. Test conditions if reliability tests are conducted
- G. Confidence intervals

QC-041 Deliverable Data: Report of Critical or Key Characteristics. The Supplier must inspect, record, and provide a report of design characteristics for each attribute or feature that are noted on the drawing as critical or a key characteristic. These design characteristics include but are not limited to, features identified on drawings as key characteristics, other items expressly described on the engineering drawing or associated specification where reporting is required, or items within the notes of the Purchase Order. If no specific reporting requirements are specified, no reporting is required. The inspection report must be submitted as part of the documentation package accompanying each part within each shipment. Unless otherwise specified, serial numbers or lot codes (or both if each exist) must be referenced on the inspection documentation. AS9102 Form 3 or equivalent (as determined in Purchaser's sole discretion) may be utilized.

Part III. Nonconformance Reporting for Disclosure of Nonconforming Product

**A. Nonconformance Reporting for Disclosure of Nonconforming Product
(Supplier may use this form or Supplier equivalent)**

SUPPLIER / PART / PO					
1. SUPPLIER		2. SUPPLIER NC #		3. DATE	
4. REQUESTOR / SUPPLIER CONTACT		5. E-MAIL		6. PHONE	
7. BLUE ORIGIN PART/ASSY NUMBER		8. BLUE ORIGIN PART/ASSY DESCRIPTION			9. REVISION
10. PO NUMBER		11. LINE ITEM	12. BUYER		13. PO QTY
					14. DEFECT QTY
<input type="checkbox"/> SEE SUPPLIER'S NC FORM			NON-CONFORMANCE DATA		
ITEM	15. SERIAL No.	16. SHT/ZN	17. DISCREPANCY		
1			IS:		
			S/B:		
2			IS:		
			S/B:		
3			IS:		
			S/B:		
4			IS:		
			S/B:		
18. ADDITIONAL INFORMATION					
ROOT CAUSE & CORRECTIVE ACTION					
19. ROOT CAUSE					
20. CORRECTIVE ACTION					
TO BE COMPLETED BY BLUE ORIGIN					
21. JULES NC #		22. DISPOSITION			
		<input type="checkbox"/> USE AS IS	<input type="checkbox"/> SCRAP	<input type="checkbox"/> AMR	<input type="checkbox"/> REPAIR ¹
					<input type="checkbox"/> OTHER
ADDITIONAL / REPAIR - INSTRUCTIONS					
¹ Supplier to provide objective evidence (e.g. travelers, work instructions, pictures, insp. measurements, etc.) of the completed repair - including Quality Assurance buyoff to close the NC prior to shipping parts.					<input type="checkbox"/> REPAIR COMPLETE

A COPY OF THE COMPLETED SUPPLIER NCR IS TO BE INCLUDED IN THE SUPPLIER'S DATA PACK

SUPPLIER INSTRUCTIONS:

Supplier fills out boxes 1-20. Additional items can be added to the NON-CONFORMANCE DATA section as required. See below. Supplier's unique non-conformance reference No. can be added to box 2. Suppliers can submit their own non-conformance form provided it contains all the information that this form requires in boxes 1-20. When Supplier non-conformance forms are submitted the Supplier will fill out boxes 1-14 and check the "SEE SUPPLIER'S NC FORM" box in NON-CONFORMANCE DATA section header and attach their NC form to the Supplier NCR.

The IS statement(s) should reflect the actual as-is condition of the discrepancy and quantify the size, reporting the length, width, depth, etc., of defect(s) reported.

The S/B statement(s) should reflect the firm drawing, spec, and/or PO requirement not being met.

Please include pictures (with steel rulers/scales for size estimates - or annotated as needed), redline drawings, heat maps, insp. report data, etc. to accurately describe the non-conformance(s).

ROOT CAUSE & CORRECTIVE ACTION (RCCA):

Supplier NCRs may be submitted without RCCA to start Blue's disposition review but complete RCCA will be required to be provided before the Blue Origin Jules NC can be closed.

RCCA should employ traditional quality analysis tools (8D/Fishbone/5-Why etc.) accomplished by a team of stakeholders.

Root Cause should not be a restatement of the as-is condition nor identify human error alone as a RC.

Corrective Action should focus on properly documented processes and procedures. Corrective Action should not consist of disposition rationale nor cite training alone as CA.

DISPOSITION:

Final disposition, including the Blue Origin Jules NC No. will be communicated by Blue Origin to the Supplier via the disposition section of the Supplier NCR - boxes 21 & 22.

REPAIRS:

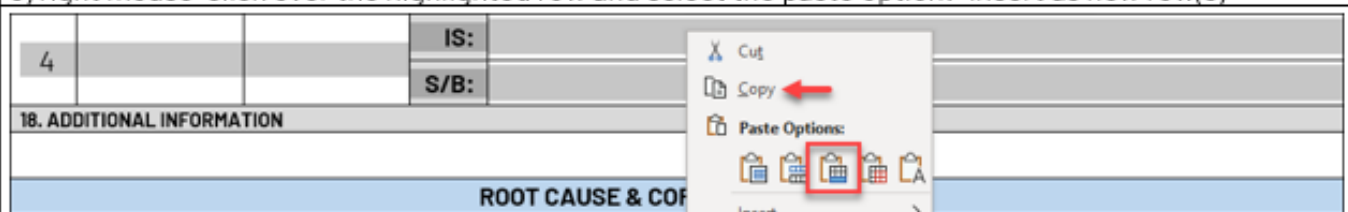
Repairs will be communicated through the Supplier NCR, inclusive of objective evidence of repair completion. Once the repair is complete and approved, the REPAIR COMPLETE will be checked in box 22.

SOURCE INSPECTION / SHIPPING:

Suppliers are to include a copy of the completed Supplier NCR with final disposition in the Supplier's datanack.

To add items to the NON-CONFORMANCE DATA section:

- 1) Highlight a complete item row - ensure the IS and S/B rows are selected
- 2) copy ([ctrl-C](#))
- 3) right mouse-click over the highlighted row and select the paste option: "insert as new row(s)"



Part IV. First Article Inspection Documentation Requirements

1. First Article Inspection Documentation Package Contents

The first article inspection report document package must include the following information:

- A. Table of contents (required only for reports with more than ten (10) sheets of supporting documentation)
- B. Supplier certificate of conformance
- C. Purchase Order showing the contractually required document revisions, specifications, and Quality Clauses applicable to the material being processed or manufactured
- D. Part or assembly (or both if applicable to this Purchase Order), drawings of the current revision that matches the requirements of this Purchase Order
- E. Drawings must be ballooned or clearly marked, and all design characteristics must be numbered and accounted for on AS9102 Form 3
- F. AS9102 FAIR – completed forms 1, 2, and 3 or equivalent
- G. (Assemblies only): detail part certification documentation is required
- H. Raw material certifications
- I. Any special process certifications and test reports
- J. Any nonconformance data documentation
- K. Other required documents required under this Purchase Order, including but not limited to in the drawing, statement of work, specifications, quality clauses, or other Purchase Order notes related to product characteristics
- L. Any additional documents or forms that ensure the report is inclusive and complete
- M. Pictures to the extent required under this Purchase Order (including the drawing or specification)

2. First Article inspection Report: General Requirements

- A. All data fields as listed in AS9102 as required, conditionally required, or optional must be completed on forms 1, 2, and 3 if the data field is applicable to this Purchase Order
- B. If the field is not applicable, the field must be marked with "N/A" (do not leave the field blank)
- C. Form 3, block 5, character number must be identified on the drawing
- D. Form 1, blocks 23 and 24 are not required to be completed
- E. Marking "N/A" in form 3, block 14's "Comments" field is prohibited and must be used to clarify results or other information
- F. Supplier must perform a new first article inspection when there is a lapse in production in accordance with AS9102 requirements
- F. In addition to the twenty-four (24) month lapse in production, a full or partial first article inspection for affected characteristics must be performed when there is:
 - (i) a change in the design characteristics affecting fit, form, or function of the part
 - (ii) a change in manufacturing source(s), process(es), inspection method(s), location of manufacture, tooling, or materials that can potentially affect fit, form, or function
 - (iii) a change in numerical control program or translation to another media that can potentially affect fit, form, or function
 - (iv) a natural or man-made event, which may adversely affect the manufacturing process

- (v) implementation of corrective action required to complete a previous first article inspection (as described in AS9102, section 4.4)
- G. Any changes or deviations in the first article inspection report as required under AS9102 4.6 f. will require a full or partial first article inspection
- H. The completed first article inspection report must accompany the product on which the first article inspection was performed when shipped to Purchaser
- I. When the end item deliverable for this Purchase Order is software or includes embedded software, the supplier must account for the software testing, installation, and configuration verification within the first article inspection documentation
- K. Unless expressly required under this Purchase Order, first article inspection reports are not required for development and prototype parts, or commercial-off-the-shelf hardware (review the part drawing to determine the release level of the part or contact the Procurement Representative for a first article inspection report determination)
- L. Supplier representatives completing, reviewing, or making decisions regarding the first article inspection report must review the entire AS9102 document and have received training on these requirements
- M. Compliance to the requirements of this Purchase Order (including but not limited to the drawings, specifications, statement of work, or other exhibits) is required:
 - (i) verbal or email communication from Blue Origin personnel that contradicts or countermands the requirements of this Purchase Order (including any quality requirements) is prohibited
 - (ii) any change in the requirements of this Purchase Order must be memorialized through the issuance by Purchaser (and acceptance by Supplier) of an updated Purchase Order.
- N. The first article inspection report must contain AS9102 or equivalent forms limited to supplier or third-party software created forms that meet the requirements of the AS9102 standard.

3. First Article Inspection Report: Documentation

A. Table of Contents

Required for document packages exceeding ten (10) pages.

B. Supplier Certificate of Conformance or Compliance (or both if applicable to this Purchase Order) Minimum Requirements

- i. Supplier's full name and address
- ii. Blue Origin purchase order number, revision, and line number
- iii. Blue Origin part number
- iv. Blue Origin drawing number, including revision number
- v. Serial numbers (as applicable)
- vi. Heat, lot number, date code, and job tracking no. (as applicable)
- vii. Quantity shipped of each part number
- viii. List of all closed or approved (or both, as applicable) nonconformances
- ix. Authorized Supplier quality representative signature, their title, and date of signature
 - a. Note: An actual (or wet) written signature or verifiable electronic signature using software such as DocuSign is required. Scanned wet signatures are prohibited.

C. Purchase Order

Identify the most recent Purchase Order associated with the report, include the Purchase Order, and verify that the Purchase Order contains the following:

- i. Supplier name and address
- ii. Full part number
- iii. Current revision
- iv. Quantity ordered
- v. Due date
- vi. Quality clauses

D. Part or Assembly Drawings

If a Supplier controlled drawing is supplied by Purchaser, the first article inspection report must be performed to that drawing. The part or assembly drawing characteristics must be accurately ballooned and numbered and conform to the following requirements:

- i. Print note: Each print note must be ballooned and numbered. The full text of any print notes must be added to AS9102 Form 3.
- ii. Characteristic: Each characteristic must be ballooned and numbered including multiple occurrence characteristics (for example, "4 places" or "X4").
- iii. Bill of materials or parts list: each item must be individually matched.
- iv. Materials
- v. Standard tolerance block information: general tolerances be listed, in addition to any other requirements under this Purchase Order.

E. Specific Requirements for First Article Inspection Form Completion:

1. First Article Inspection Form 1

Fields #1-12 Part Number Accountability: All fields must be completed. Supplier must verify that part number and part revision are accurate.

Field #10 Organization Name: Supplier must list the name of the organization that performed the first article inspection.

Field #13 Detail Part or Assembly First Article Inspection:

"Assembly part" as used in this field means a part that includes a list of manufactured or procured parts, components, or sub-assemblies used in the first article inspection part.

"Detail part" as used in this field means a part that does not require a list of parts necessary to manufacture, assemble, or maintain a product. The part number does not change after it is completed.

For assembly parts, the Supplier must complete the data fields and include all lower part levels and detail parts. For detail parts, the Supplier must ensure that no data fields are completed and will doublecheck that the first article inspection is for a detail part.

Fields #15-18 "Index of part number or sub-assembly numbers required to make the assembly noted above":

Supplier must list all details from the bill of materials, parts list, and lower level parts used on an assembly in Field #15 and the associated blocks. Field #18 must include references to detail first article inspection reports when applicable to this Purchase Order.

Supplier must list the "Full" and "Complete" first article inspection report number for any manufactured detail component that is required under this Purchase Order and included in the assembly. The actual detail FAIR package is not required but must be available on demand.

If the detail first article inspection report package information is required under this Purchase Order as part of an assembly, Supplier must include first article inspection report information for the detail part with the assembly first article inspection report. All detail first article inspections must meet the requirements of AS9102.

Non-modified commercial-off-the-shelf items (if any) must be listed in this field and have a certificate of conformance or other acceptable certifications or compliance documentation (as determined by Purchased in its sole discretion) included in the first article inspection report.

If there are no specific part serial numbers, Supplier must include references to certifications or documents that will identify the parts.

Field #19 Signature: The Supplier must list the authorized Supplier quality representative signature, their title, and date of signature. (Note: An actual (or wet) written signature or verifiable electronic signature using software such as DocuSign is required. Scanned wet signatures are prohibited.)

Field #19 Completion Status: The Supplier must list whether first article inspection is complete or not complete. In checking "FAI Complete," the Supplier represents that all characteristics are conforming. In checking "FAI Not Complete," the Supplier represents that nonconforming characteristics are documented in accordance with AS9102, Section 4.4.

Fields #20, 22 Date: If Field 19 or 21 (or both) are signed, the Supplier must insert the date.

2. First Article Inspection Form 2

Field #5 Material or Process Name: Supplier must list all materials or processes (or both) if applicable to this Purchase Order that were used in the assembly. Supplier must complete the associated data fields (#6-10) as applicable to this Purchase Order. Supplier must list all modified commercial-off-the-shelf items (in addition to any other materials that are part of the final assembly).

Field #6 Specification Number: Supplier must list information related to the material specification and material form (including but not limited to sheet or bar) for all materials incorporated into the first article inspection part (for example, weld or braze filler) are listed. For special processes, Supplier must include class information.

Field #8 Supplier: The Supplier must list the complete name and address where the part was manufactured, or the process performed. Special process suppliers must be Nadcap accredited unless approved in writing by a Blue Origin quality representative. Refer to "QC-029 Deliverable Date: Special Processes" for requirements related to defined special processes.

Field #10 Certificate of Conformance Number: The Supplier must list the applicable certificate number and highlight that number on the actual certificate to that it is conspicuous.

Field #14 Signature: See requirements above for Form 1 Field #19.

Field #15 Date: See requirements above for Form 1 Field #20, 22.

3. First Article Inspection Form 3

Field #9 and associated fields #5-#8 and #10-#14 Inspection Results: The supplier must complete these fields for each characteristic.

Field #5 Characteristic Numbers (Char No.): The Supplier must list each drawing characteristic or feature (or both as applicable to this Purchase Order) in conformance with the same numbering format shown on the ballooned drawing.

Field #6 Reference Location: The Supplier must conspicuously list locations of design characteristics features and ensure their accuracy. The Supplier must also list the page and zone locations (for example, Sh. 2 of 12, Zone B5). The Supplier must review any drawing revisions applicable to this Purchase Order and accurately reflect any changed (or updated) characteristics locations.

Field #7 Characteristic Designator: The Supplier must list any special characteristic (for example, critical, flight safety, key characteristic, or characteristics).

Field #8 Requirement: The Supplier must match the full feature information listed in the requirement field exactly with the information on the drawing. For example, if a drawing or Purchase Order note requires "Part Mark Per AS478-7A at Location Shown after Platting," the Supplier must list it exactly as stated. Supplier is prohibited from notating "Part Mark" (or anything similar) in the requirement field. If basic dimensions are listed on the applicable drawing, Supplier is prohibited from adding tolerances, and the result must be the measured result.

Field #9 Results:

Attribute data as used in this field means a positive or negative conclusion, verification, or result. Attribute data is the positive or negative conclusion, verification, or result from an analysis using variable data (defined below). Examples of binary conclusions or results include but are not limited to good versus bad, yes versus no, pass versus fail, accept versus reject, confirmed versus not confirmed, conforming versus nonconforming.

For characteristics verified by attribute inspection, the Supplier must include a statement of positive or negative conclusion or result. Supplier is prohibited from listing "Noted" or "Visual" (or similar observations). The Supplier must list any tools used for the conclusion, verification, or result statement in field #10.

Variable data is information that is acquired through quantitative measurements taken on a continuous scale (variable inspection), including (but not limited to) length, time, diameter, weight, thickness, and height.

For any characteristics verified by variable inspection, the Supplier must double-check that the information is accurate and complete. The Supplier must list variable data so that the tolerance of the characteristic can be divided (using the gage or measurement instrument's discrimination or resolution) into ten equal parts. Stated otherwise, the gage or measuring instrument must be 10 times as accurate as the characteristic to be measured. The measurement result must show the actual measurement on the instrument (rounding is prohibited). For example, 0.004 must be listed instead of 0.00).

The Supplier must list only the actual results from the inspection of the final product (in conformance with the requirements of this Purchaser Order (including the drawing or specifications). The Supplier must list all results in this field in the same "Units" as the approved document. The Supplier is prohibited from replicating the characteristic requirement.

Figure 1: Example of actual results


8. Requirement:	9. Results:
2.00 +/- .030	2.010
4.00 +/- .030	4.002

A "MAX" or "MIN" dimensional reference is prohibited unless the requirements of this Purchaser Order (including in the drawing or specifications) state "MAX" or "MIN" for the feature requirements.

A "<" or ">" (less than or greater than) symbol dimensional reference is prohibited unless this Purchaser Order (including but not limited to the drawing or specifications) requires "<" or ">" for the feature requirements.

Below are examples of correct and incorrect reporting of results.

Figure 2: Example of correctly listed results

46	SHT2/B1		$\frac{63}{\checkmark}$ HATCHED AREA	 30-55	X
----	---------	--	---	---	---

Multiple characteristics as used in this field means identical characteristics that occur at more than one location but are established by a single set of drawing requirements. For multiple characteristics (for example, identical characteristics that occur four times in two locations), the Supplier must list each characteristic as individual values, or list once with the minimum and maximum of the measured values attained. If the Supplier has knowledge indicating or suggesting that a characteristic is nonconforming, then that characteristic must be listed separately with the measured value.

Figure 3: Example of correctly listed results using the minimum or maximum measurements

4X $\varnothing .750 \pm .010$.750-.752
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Min/Max range

Figure 4: Example of correctly listed results individually listing measurements

2X $\varnothing .221 +.010 / -.001$.221 / .221
-------------------------------------	-------------

Locations 1 and 2

Figure 5: Example of correctly listed results using the identical characteristic on multiple lines:

8. Requirement	9. Results
$\square .005 [A][B]$ #1	0.0001
$\square .005 [A][B]$ #2	0.0002
$\triangle .010 [A][B][C]$ #1	0.0016
$\triangle .010 [A][B][C]$ #2	0.0015
$\triangle .010 [A][B][C]$ #3	0.0015
$\triangle .010 [A][B][C]$ #4	0.0010
$\triangle .010 [A][B][C]$ #5	0.0015
$\triangle .010 [A][B][C]$ #6	0.0016

Each occurrence is listed individually. They could also be listed in series in the results section on one line.

Field #10 Designed Qualified Tooling: The Supplier must list the instrument, tool, or method used to measure the characteristic result. Examples include but are not limited to calipers, micrometers, capability maturity model, pin gauge, thread gauge, and design tooling. To obtain attribute data acceptance of the characteristic, the Supplier must record the tool identification number, the gauge value, or range (as applicable to this Purchase Order). To obtain variable data acceptance of the characteristic, the Supplier must include the name and serial number of the instrument and (if applicable) the calibration expiration date.

Field #11 Nonconformance Number: The Supplier must obtain a document nonconformance number from Purchaser for any nonconformance. The document nonconformance number must be listed in this field. In addition, the Supplier must attach nonconformance information to the report as part of the document package.

Note: The first article inspection will not be considered complete if there is a design characteristic nonconformance.

Field #12 Signature: See requirements above for Form 1 Field #19.

Field #13 Date: See information listed above for Form 1 Field #20, 22.

F. Detail Part Certification Documentation Requirement (Applicable only to Assemblies)

1. **Detail Parts with Their Own Drawings:** Supplier must list the “full” and “complete” first article inspection report number on AS9102 Form 1 for any manufactured detail component that is required under this Purchase Order and included as part of the assembly. Supplier is not automatically required to include the actual detail first article inspection report number package in the assembly first article inspection report. However, Supplier is required to promptly provide the package to Purchaser upon written request. Any detail first article inspections must meet the requirements of AS9102.
2. **Detail Parts Included as Part of the Assembly Drawing:** If the detail build instructions are on the assembly drawing, Supplier must include the assembly drawing with the assembly first article inspection report information for the detail part. For detail parts that have their manufacturing data included in the assembly drawing (for example, if the drawing shows all required dimensions, material, or special processes), Supplier must include the following information:
 - 1) Ballooned drawing (may be included on the assembly drawing)
 - 2) AS9102 Forms 1, 2 and 3 completed per AS9102 and under the requirements of this Purchase Order
 - 3) Material certification (if applicable to the requirements of this Purchase Order)
 - 4) Special process certification (if applicable to the requirements of this Purchase Order)
 - 5) Any information on any deficiencies, nonconformances (or both)
 - 6) Any other data required by this Purchase Order

G. Raw Material Certificates of Conformance

For any raw materials used as part of an assembly and listed in Form 2 Field #10, the Supplier must provide Purchaser with certificates of conformance (completed and approved) and all test reports related to the material certificates of conformance. Raw material certificates of conformance must contain the following:

- 1) Part number, supplier name, supplier address
- 2) Unique identifying number
- 3) Information showing traceability to the melt source
- 4) Matching heat lot numbers (by material lot)
- 5) Single heat lot (if required by this Purchase Order, including on the print)
- 6) Information must match the requirements of this Purchaser Order (including the drawing or specifications)
- 7) Material type as required by this Purchaser Order (including the drawing or specifications)

- 8) Proper "temper", "hardness", or "condition" as required by this Purchaser Order (including the drawing or specifications)
- 9) Chemical composition description (if required by this Purchase Order)
- 10) Physical properties description (if required by this Purchase Order)
- 11) Supplier quality representative signature, title, and date

H. Special Process Certifications

All special processes must be performed by Nadcap accredited suppliers. For any deviation from this requirement, the Supplier is required to obtain written approval from Purchaser.

Special process certifications must have the following:

- 1) Part number, quantity, supplier name, and supplier address
- 2) Unique identifying number
- 3) Information matching the requirements of this Purchase Order (including the drawing or specification)
- 4) An acceptance statement indicating that the Product meets the requirements of this Purchase Order

I. Nonconformance (NC) Data Documentation

The Supplier must include in the first article inspection document package any nonconformance documentation related to the production of a Product being provided under this Purchase Order.

J. Other Required Documents

All documents required as part this Purchaser Order (including but not limited to the drawing, specifications, inspection plans, road maps, and source acceptance) must be provided in the first article inspection document package.

K. Additional Documents or Forms for Report Completeness

The Supplier is strongly encouraged to provide in the first article inspection document package any additional documents or forms that are not mandatory under the requirements of this Purchase Order, but otherwise bring clarify to the required information or documentation. Examples includes (but are not limited to) part marking information, heat maps, machine cycle profiles, sub-tier supplier certifications, or test information.

L. Pictures

If pictures are required under this Purchase Order, Supplier must provide pictures that are 1920 x 1080-pixel resolution (or better). Pictures that required to be delivered in hard copy format must be provided on 8.5 inch x 11 inch paper, and must include no more than two pictures per page. Pictures that required to be delivered in electronic copy format must be delivered in JPEG file format. Supplier must provide pictures to Purchaser that are clear, in focus, and use adequate lighting.

Part V: List of Blue Origin Special Processes and Equivalent Nadcap Codes

Processes listed in the table below require approval by either Purchaser’s Materials and Process Engineers, Supplier Quality Engineers or Nadcap accreditation when used to produce qualification or Production Release parts and assemblies. If unsure about required approvals, contact the Purchaser’s Procurement Representative or Supplier Quality Engineer for additional information.

Type	Process	Reference Documents	Nadcap Code
Additive Manufacturing	Laser Powder Bed AM (aka SLM)	CMMF-SP0003 CMMF-SP0007	AC7110/14
	Laser Powder Spray (aka LENS)	CMMF-SP0003 CMMF-SP0007	AC7110/14
	Other additive methods for mission-or safety-critical components		AC7110/14
Avionics	Click Bond installs	CMMF-PR0030 CMMF-PR4002	
	Wire Harness Fab	CMFM-PR3006 CMFM-PR3007	
Cladding, Welding, and Cutting	All other welding for mission- or safety-critical components		AC7110
	Friction Stir Welding	AWS D17.3	AC7110/7
	Fusion Welding	AWS D17.1	AC7110/5
	Laser Cladding	CMSP-05448	AC7110/5
	Laser Cutting	CMMF-SP0015	AC7116/4
	Laser Welding	CMMF-SP0014	AC7110/6
	Orbital Tube Welding	CMMF-PR0023	AC7110/5
Cleaning	Cleaning, Passivation and Verification	CMSP-02291 CMSP-02292	AC7108/6 AC7108/12
	Passivation of Corrosion Resistant Steels	AMS 2700	AC7108/12
Coatings	Anodization	MIL-A-8625	AC7108/8
	Chemical Conversion Coating Application	CMPR-01274	AC7108/11
	Hard Plating		AC7108/9 AC7108/10
	Primer Application	NGPR-18630	AC7108/1
	Topcoat Application	NGPR-18630	AC7108/1
Composites	Composite Bagging (reusable and non-reusable bags)	CMMF-SP0009 NGSP-03697 NGSP-06520	AC7118
	Composite Bonding	CMMF-SP0009	AC7118
Composites (cont.)	Composite Cure	CMMF-SP0009 NGSP-03697 NGSP-06520	AC7118

Type	Process	Reference Documents	Nadcap Code
	Composite Layup - Automated Fiber Placement	CMMF-SP0009 NGSP-06520	AC7118
	Composite Layup - Automated Tape Layup	CMMF-SP0009 NGSP-06520	AC7118
	Composite Layup - Hand Laminated Prepreg	CMMF-SP0009 NGSP-03697 NGSP-06520 NSPR-08015	AC7118
	Composite Overwrap Installation	CMMF-SP0009	AC7118
	Composite Overwrapped Pressure Vessel (COPV) Manufacturing	Blue Origin Process Control Approval Memo as required by Purchase Order or Drawing	
	Composite Potting Installation	CMMF-SP0009 NGSP-03697 NGSP-06520	AC7118
	Composite raw material manufacturing	CMSP-00289 CMSP-00758 CMSP-00918 CMSP-00960 CMSP-01454 CMSP-01821 CMSP-01916	AC7124
	Composite Repair	CMMF-SP0009 NGSP-03697 NGSP-06520	
	Contact Materials	CMMF-SP0009 NGSP-03697 NGSP-06520	AC7118
	Core Splice	CMMF-SP0009 NGSP-03697 NGSP-06520	AC7118
	Honeycomb Core Kitting	CMMF-SP0009 NGSP-03697 NGSP-06520	AC7118
	Nondestructive Inspection of Composite Components	CMMF-SP0009 NGSP-03697 NGSP-06520	AC7114

Type	Process	Reference Documents	Nadcap Code
	Tool Manufacturing and Approval	CMMF-SP0009 NGSP-03697 NGSP-06520	AC7118
	Tool Preparation	CMMF-SP0009 NGSP-03697 NGSP-06520	AC7118
	Trim and Drill of Cured Composite Components (automated and manual)	CMMF-SP0009 NGSP-03697 NGSP-06520	AC7118
Fitting Installation	Fluid Fitting install and Torque	CMMF-PR4003	
	Swaging Fluid Fittings (Rynglok)	CMMF-PR4003 AS5959	
Forming Operations	Bump Forming	Blue Origin Process Control Approval Memo as required by Purchase Order or Drawing	
	Casting		
	Extrusion		
	Forging		
	Spin Forming		
	Thermoforming		
Inspections	Fluorescent Penetrant Inspection	ASTM E1417	AC7114/1
	Penetrant Inspection	CMMF-PR0037 ASTM E1417	AC7114/1
	Radiographic Inspection	ASTM E1742	AC7114/4
	Shearography	CMMF-PR0039 CMPR-09632	AC7114
	Ultrasonic Inspection	AMS-STD-2154 ASTM B594 ASTM E2375 ASTM E2362 ASTM E2700	AC7114/3
Inspections (cont.)	Visual Weld Inspection	AWS D17.1 AWS D17.3 CMMF-PR0023 CMMF-SP0014	
Insulation	Spray-On Foam Insulation	CMMF-PR0039 NGPR-15996	
Structures Integration (Drill/Shim/Fastener/Seal)	Fastener Install and Torque	CMMF-PR0003 CMMF-PR0009	
	Krytox Application	CMMF-PR0014	
	Liquid Shim Install	CMMF-PR0030	
	Lockwire	AS567	
	Potted Insert Installation	CMMF-PR0030	

Type	Process	Reference Documents	Nadcap Code
	Polysulfide Sealant	CMSP-08633	
	Structural Adhesive Bonding	CMMF-PR0030	
Surface Treatment	Chemical etching for precision material removal		AC7108/2 AC7180/5
	Passivation	AMS2700	AC7108/12
	Shot peening		
	Surface Preparation	CMPR-14254	AC7108/3
Thermal Processing	Hot Isostatic Pressing		AC7102
	Other heat treatment not controlled by an industry specification		AC7102
	Vacuum Brazing	AMS 2750 AMS 2774 AMS 2801 AMS 2759 AMS 2769	AC7102/1
	Vacuum Heat Treating	AMS 2750 AMS 2774 AMS 2801 AMS 2759 AMS 2769	AC7102