



KEYSTONE ENGINEERING COMPANY

PURCHASE ORDER QUALITY ASSURANCE REQUIREMENTS

SECTION - I:

REQUIREMENTS IN THIS SECTION ARE APPLICABLE TO ALL PURCHASE ORDERS:

A. KEYSTONE ENGINEERING CO. (KEC) RIGHT OF ACCESS

Keystone Engineering Co. (KEC) reserves the right to inspect all items on this order at the supplier's facility. KEC Representatives may elect to conduct inspection either on a random basis or to the extent of 100 percent inspection. KEC will notify the supplier in advance to the shipping date if such inspection is required. Inspection is covered in Section II, QA Code 6.

B. CHANGES

Supplier will accept no changes to the specification or drawing referenced in this Purchase Order, without written approval from KEC.

For supplier-controlled products, all changes in design, processes, fabrication, sub-tiered supplier or distributor shall be submitted to KEC in writing using the Supplier Inquiry Request (SIR) process with justification to verify equivalent or increased reliability, and be authorized by KEC prior to proceeding. The SIR form shall be submitted to KEC for written approval.

C. MRB/ REPORT OF DISCREPANCY

Material review board (MRB) authority is not delegated to suppliers without express written approval by KEC. All departures from drawings, specifications, or other Purchase Order Requirements must be reported to KEC for authorization for shipment. Failure to comply may result in rejection of the shipment and will reflect on the supplier's quality rating.

D. RESUBMITTED MATERIAL

Material resubmitted after prior rejection shall have referenced on the Material Shipper/Certificate of Conformance (C of C) the KEC Nonconformance Report number, and a statement as to whether the item was reworked or replaced.

E. RECORD RETENTION

Records developed as a result of this order shall be stored and maintained to prevent degradation and damage. When records reach their respective storage date retention limit, they shall be destroyed by shredding or by other equivalent methods that render them completely unreadable.

Items on this order require storage of records for a minimum of ten years after the close of the contract and require customer permission for destruction of records. Permission shall be requested through KEC.

F. PACKAGING

The supplier's quality organization shall be responsible to ensure that items of this procurement are packaged in such a manner that the dimensional integrity is preserved, contamination, and corrosion are prevented, and no physical damage occurs. When specified, ensure that packaging is in accordance with the applicable specification or drawing.

O-rings and gaskets shall be individually bagged and tagged.

G. PRIME CONTRACTOR SOURCE SURVEILLANCE

During performance of this order, the supplier's Quality Control or Inspection System and Manufacturing Processes are subject to review, verification, and analysis and right of access by authorized prime contractor representatives. The supplier shall be notified of any such actions in advance by the cognizant buyer.

H. CORRECTIVE ACTION

Acceptance of this Purchase Order obligates the supplier to perform, upon request, a corrective action investigation when discrepant materials are received by KEC. A written report shall be furnished, within a reasonable time, which is specific and conclusive to prevent a recurrence of the discrepancy.

I. CALIBRATION AND MAINTENANCE

Measuring instruments must be calibrated and maintained in accordance with ANSI/NCSL Z540.1 (latest revision). ANSI/NCSL Z540.1 requirements may be tailored to cover the specific calibration system that covers hardware specified on this order, and must be approved by KEC.

J. FIRST ARTICLES

First Articles must be submitted and accepted by KEC Quality Assurance unless otherwise specifically authorized by KEC. The First Articles must be inspected for compliance to requirements as specified in the applicable engineering drawings and specifications as specified on the Purchase Order. First Article requirements may be satisfied by a partial First Article Inspection (Delta FAI) when it addresses differences between the current configuration and prior approved configurations. First Article requirements may also be satisfied by previously approved First Article Inspections performed on identical characteristics of similar parts produced by identical means. A First Article Inspection report shall be for ONE piece only. First Article Inspection reports may be either per AS9102 format or per supplier's internal procedure, unless otherwise noted on the Purchase Order. *Explanation: Some contracts require AS9102 format and do allow other formats.* First Article Inspection must be performed when one of the following changes have occurred.

Change in design affecting fit, form or function of the part.

Change in manufacturing sources(s) process(es), inspection methods(s), location of manufacture, tooling, or materials that can potentially affect form, fit or function.

Change in the numerical control program or translation to another media that can potentially affect form fit or function.

Natural or man-made event that may adversely affect the manufacturing process.

Production lapses longer than 2 years from when the previous First Article was accepted.

Note: For Purchase Orders with multiple line items, due to split delivery, FAI is required only for the first shipment of the PO.

K. BLANK BOXES OR CELLS

Documents such as FAI reports, Inspection reports, Test data sheets etc., shall not have any blank cell, row or column. Any blank should be marked N/A or have a line drawn to indicate that the information is not applicable. Checklists that use checked or filled boxes to indicate the completed process, operation, etc. and blank boxes for the unperformed process or operation are acceptable; these do not count as blanks for purposes of this clause.

L. COUNTERFEIT / SUSPECT PARTS

The supplier, and its sub-tier suppliers, shall not use or supply counterfeit / suspect parts identified as a copy or substitute part whose material, performance, or characteristics are knowingly misrepresented.

M. Competence of Personnel, Including Necessary Qualifications.

The suppliers are expected to have a clear understanding of all Purchase Order (PO) requirements, including competence of personnel and any necessary qualifications. If any of the requirements are not understood and/or personnel are not qualified to the requirements imposed by the PO and governing specifications, the supplier shall notify KEC prior to acceptance. If supplier accepts the PO and cannot meet the requirements work shall not be performed (stop) and the supplier shall contact KEC immediately for further instructions.

SECTION - II

CLAUSES REQUIRED WHEN STIPULATED ON PURCHASE ORDER:

1. AS9100 and ISO 9001

The supplier shall maintain an inspection system that meets the requirements of AS9100 and/or ISO 9001. The supplier shall impose the requirements of AS9100/ISO 9001 on all sub-tier suppliers used in the manufacture of products produced in accordance with this Purchase Order when AS9100 and/or ISO 9001 are imposed.

2. NASA NPR 8735.2

The supplier shall provide and maintain a system that complies with NASA NPR 8735.2, Management of Government Quality Assurance Functions for NASA Contracts (inspection System Provisions for Aeronautical and Space System Materials, Parts, Components, and Services.) Compliance with all sections is required unless specifically excluded or stipulated in the body of the Purchase Order. The Inspection System Plan shall be

submitted within 30 days of contract award or two weeks prior to fabricating, whichever is earliest. The supplier shall impose the requirements of NASA NPR 8735.2 on all sub-tier suppliers used in the manufacture of products produced in accordance with this Purchase Order when NASA NPR 8735.2 is imposed.

3. GOVERNMENT SOURCE INSPECTION

All work on this order is subject to inspection and test by the Government/Regulatory Authorities at any time. The Government Quality Representative who has been delegated quality assurance functions on this procurement shall be notified immediately upon receipt of this order. The Government Quality Representative shall also be notified forty-eight (48) hours in advance of the time articles or materials are ready for inspection or test or as defined by the Government Quality Representative.

In the event a Government Quality Representative/Regulatory Authority or office cannot be located, contact KEC. Evidence of Government inspection must be shown on all shipping documents.

4. SOURCE INSPECTION BY KEC QUALITY REPRESENTATIVE

All items covered by this Purchase Order are subject to source inspection by the KEC Supplier Quality Representative. This will include continuous surveillance of the products and supplier's systems, procedures, and facilities. The supplier shall furnish, at no cost, necessary facilities and equipment, supply data, and performance test as required by applicable drawings, specifications, and inspection instructions under the surveillance of the KEC Supplier Quality Representative. Source inspection requirements may be waived by Keystone Engineering Quality Assurance when the supplier has established a history of providing material that meets KEC quality standards.

Keystone Engineering's Quality Representative shall provide the supplier with a completed record of the inspection Form No: (KE06-002) when comp, authorizing product release. The supplier shall include this form with the documents and products shipped to Keystone Engineering Co.

5. ACCEPTANCE OF PRODUCTION TOOLING

Acceptance of production tooling on this Purchase Order shall be contingent on inspection and acceptance by KEC. Representation of the applicable characteristics on each of the samples produced from this tooling must conform to the dimension and tolerances as specified on the engineering drawing and specifications on this Purchase Order. This inspection shall be under the cognizance of the KEC Representative, at the supplier's facility or as directed by KEC. The items may be shipped to KEC for inspection. Tooling must be identified with KEC assigned tooling number and name.

6. FIRST ARTICLES REQUIRED PRIOR TO SHIPPING

A First Article is required on this order. (Ref Section I, Item J)

Supplier is not authorized to ship PO lot quantity until First Article Inspection Report and all certification documentation associated with first article have been reviewed and approved by KEC. The supplier will not be allowed to ship to KEC until authorization to ship has been granted.

7. TEST BARS (castings)

Castings - The supplier shall furnish with each shipment of castings the following:
Two (2) test bars representative of each treat lot and made from the same melt as castings supplied.

One (1) spectrographic disc representative of the entire heat or melt.

Test bars and discs shall be identified with the supplier's name or trademark melt and heat treat lot number, and alloy identification.

8. MATERIAL TEST REPORTS

8A: CHEMICAL AND/OR PHYSICAL TEST REPORTS

Each shipment shall be accompanied by a copy of chemical and physical test reports identifiable with the material submitted. These reports must contain an affirmation of an authorized representative of the agency performing the test and must assure conformance to specification requirements.

If the chemical shipment is received with the original Manufacturing MSDS which shows Physical and Chemical properties, then MSDS is acceptable as a Chemical and/or Physical test report for the proprietary material.

Note: A report listing Maximum and Minimum range of the actual parameters is acceptable except when actual values are required for CTQ data in accordance with KEC drawing requirements.

8B: MSDS FOR CHEMICALS (SOLID, LIQUID, OR GAS)

Each shipment must be accompanied by a legible and reproducible copy of Material Safety Data Sheet (MSDS) for each type of chemical received.

9. FUNCTIONAL TEST REPORTS

Each shipment shall be accompanied by one copy of actual test results for each item identifiable with test parameters defined as operational, mechanical, electrical, hydraulic inspection, etc., of material submitted. This report must be identifiable to P.O. number, the item(s) tested (Part Number and Serial Number) and contain the affirmation of an authorized representative of the agency performing the test and must assure conformance to specification requirements.

10. NONDESTRUCTIVE TEST REPORTS

Each shipment shall be accompanied by one copy of nondestructive test reports identifiable with acceptance requirements of the material submitted. These reports must contain the affirmation of an authorized representative of the agency performing the tests and must assure conformance to specification requirements type of test required:

Die Penetrant
Magnetic Particle
Ultrasonic
Other

11. X-RAY CERTIFICATION

All items included in this Purchase Order requiring radiographic inspection will be submitted to a certified x-ray laboratory and processed in accordance with applicable specifications and standards. All findings will be reported; this form shall contain the name of the individual reading the film and affirmation of an authorized representative. The x-ray film and of the report must accompany the material. The film becomes the property of KEC. A control number must be assigned to each part, appear on each film, and be referenced on each report as a method of cross-referencing each film exposure and report. The x-ray views must also be identified.

12. PROCESS CERTIFICATION

Each shipment shall be accompanied by one copy of a certification for processes covered by specifications such as but not limited to heat-treating, welding, magnetic particle inspection, penetrant inspection, ultrasonic inspection, surface preparation or treatment, etc., stating that the processing was performed to specification requirements. The certification shall list the applicable specifications (class/condition designations) to which the processes conform, the name of the agency that performed them, if other than the supplier, the date, and the affirmation of an authorized representative of the supplier. Sub-tier processor's certification must also contain the affirmation of an authorized representative of the processor's representative.

Note: If the supplier performs any of the above processes within their facility, then the supplier may state the applicable specification on their Certificate of Conformance (C of C) or they may provide their internal process certification or other evidence that the process was completed (e.g., work order, shop order, traveler).

13. TRACEABILITY TO RAW MATERIAL

Reports (Full Pedigree From Melt to Final Product) – Raw material certifications shall show clear traceability to the manufacturer(s) of the raw material including ingot source, all thermo-mechanical processing (i.e. forging, rolling, drawing, etc), heat treatment, chemical processing and inspections as required by applicable raw material specification requirements.

Chain of Custody (Disguising intermediate ownership) – Suppliers shall not disguise the pedigree of material or chain of ownership by removal of a previous supplier's name, nomenclature or identification.

The substance of this Article shall be flowed in all subcontracts at every tier.

All traceability and inspection records must be identifiable with raw materials, parts, or assemblies to which they are applicable and shall be available upon request or audit by KEC or the Customer Representative.

Raw materials used shall be identified by lot number as well as material type, specification, heat number, etc., and shall be identifiable with lot of raw materials used. When two (2) or more parts are joined in an assembly, the supplier shall prepare an assembly parts list, identifying each in the assembly and the lot of raw material from which it was fabricated.

All material fabricated by the supplier in one lot shall be identifiable to that lot when supplied to KEC. When the supplier is combining material, fabricated in two or more different lots to fulfill Purchase Order requirements, these materials shall be segregated and identifiable to the lot in which it was fabricated.

14. IDENTIFICATION OF LIMITED-CALENDAR-LIFE MATERIAL

The supplier shall identify each item, package, or container of limited-calendar-life material with the cure or manufacture date, storage temperature, and special handling conditions in addition to the normal identification requirements of name, part or code number, specification number, type size, quantity, etc. The identification including special handling conditions, shall be recorded on certifications and shipping documents for the material or a MSDS. Material received shall contain a minimum of 50% of its shelf life expiration date.

15. IDENTIFICATION OF LIMITED-CALENDAR-LIFE MATERIALS INSTALLED IN AN ASSEMBLY

The supplier shall furnish cure date, assembly date, part name and number, component number, and manufacturer's identification (if different from part number) for rubber parts (synthetic or natural) installed in assemblies delivered under this Purchase Order. This information shall be identifiable with the assembly, and when applicable, components parts within the assembly to which it applies. The assembly date shall be marked on each assembly on an attached tag.

The supplier shall furnish with each shipment of an assembly incorporating a limited-calendar-life material that does not require age control after installation (e.g., adhesive, resins, plastic base paint, etc.) one copy of a certification stating that the limited-calendar-life material was properly controlled prior to use and within the shelf-life period when incorporated. The certification shall be identified with the assembly(ies) to which it applied and this Purchase Order. The certification shall contain the affirmation of an authorized representative of the supplier. Material received shall contain a minimum of 70% of its shelf life expiration date.

16. PART TRACEABILITY (SERIAL NUMBER)

Each part, component, or assembly furnished on this Purchase Order shall be identified with a distinct serial number. Serial numbers shall not be duplicated for one part, component, or assembly number when manufactured in sequential lots. Marking of serial number shall be per MIL-STD-130 or per the applicable specification.

KEC designated serial numbers shall be assigned and controlled for traceability.

17. LOT TRACEABILITY (DATE CODE OR LOT/BATCH NUMBER)

Each part, component, or material quantity furnished shall be identified by lot, or batch, traceable to the actual manufacturing process. The lot or batch number may be by date or supplier shop order code, but must provide the capability for a lot or batch purge in the event of determination of a condition of discrepancy. Identification marking shall be per MIL-STD-130 (latest revision) or applicable specification.

Lot control information shall be retained by supplier for a minimum of five (5) years, unless otherwise specified in the order or specification.

18. CERTIFICATE OF CONFORMANCE

Each shipment must be accompanied by one copy of a certificate of conformance stating compliance to the specification to which the material, part, or service complies, as stated in this purchase agreement. The certification shall contain this purchase order number, lot date code, supplier's order number, and waivers granted by KEC and the affirmation of an authorized representative of the supplier. In the event that the C of C is integrated into the packing slip, an affirmation may not be present. In this case, the supplier's information listed on the packing slip can be accepted as the affirmation.

The Certificate of Conformance shall include part number, dash number and revision, and statement of work (SOW) number, if provided by KEC.

The Certificate of Conformance can be either from the original manufacturer or from the authorized distributor.

For Chemicals, a Certificate of Analysis will suffice as long as it includes the part or catalog number, lot number, date of manufacture and shelf life. The Certificate of Analysis lot number shall be included on the supplier packing slip.

19. SUPPLIER'S INSPECTION SYSTEM

The products supplied on this order shall be inspected for compliance to dimensional, finish, material, workmanship, and performance requirements specified. The supplier shall maintain records of inspections for the period required by this order. The inspection system is subject to review by the KEC Quality Representative and is subject to KEC approval.

20. SPACE FLIGHT MARKING

The material to be furnished hereunder is for space flight use. All markings of shipping containers shall be clearly legible from a distance of 36 inches, shall be blue in color, and may be applied by stencil, rubber stamp, or adhesive label. In addition, all shipping containers for items under this Purchase Order shall be marked as follows:
"ITEMS FOR SPACE FLIGHT USE".

21. ITEMS FOR MANNED SPACE FLIGHT

The material to be furnished hereunder is for use in manned space flight. Materials, manufacturing, and workmanship of the highest quality standards are essential to astronaut safety.

22. SPECIAL PROCESSING TEST COUPON

27A: The part fabricator is to furnish, with parts shipped, a test coupon made from the same material stock from which the parts were fabricated. This coupon is to be wafer of the rod, a blank of the plate, etc. shall have an identical surface finish to the related part on one side only and shall contain a hole approximately 0.06 inch in diameter. The coupon is to be bagged and tagged with part number identify, PO number, and lot numbers.

27B: The special processor shall process the test coupon furnished concurrent with parts being processed by this order. The test coupon is to be delivered with parts processed, bagged and tagged with part number identify, PO number, and lot number.

23. AUTHORIZED MANUFACTURER AND DISTRIBUTOR

The items of this Purchase Order shall only be furnished by a supplier who is the manufacturer or a duly authorized distributor, or agent, for the manufacturer of the product specified on this order. Goods furnished shall be from direct factory shipment, or from the distributor's stock originally received by direct manufacturer's shipment, precluding the use of government, or other resold surplus material. Material specified by a KEC Specification Control Drawing shall be furnished with any quality requirements stated in the specification imposed upon the manufacturer.

The supplier, distributor or sub-tiered supplier shall maintain a system that prevents deterioration of product quality. Traceability between the product and the manufacturer shall ensure control of manufacturer's certification, shelf life as required, and packaging.

Any change in sub-tiered supplier to fill this purchase order request, shall be approved in writing by KEC using the Supplier Inquiry Report (SIR) Process.

Software distributors shall provide, with the shipment, a Customer License Agreement stating the supplier's name, address, provisions for limitations, restrictions, or warranties, and applicable software version number.

24. EXCLUSION OF MERCURY CERTIFICATION

The level of mercury within a component shall be less than 0.01 mg/m³.

The supplier shall submit a certificate of conformance certifying that the materials supplied by, or manufactured in the supplier's processes, are known to contain less than 0.01 mg/m³ of Mercury, or have not knowingly been in direct contact with mercury or any of its compounds; nor with any mercury-containing device employing only a single boundary of containment. An annual (calendar year) Mercury Exclusion Certificate is acceptable in lieu of a certification with each shipment.

Changes in the supplier's process and/or devices, which will potentially expose manufactured materials to mercury or any of its compounds, shall require the supplier to immediately notify KEC of such change, and the annual certification shall be voided until the conditions resulting in potential mercury contamination are resolved.

Mercury exclusion certification can be either from the original manufacturer or from the authorized distributor. The Mercury Exclusion Certification from whomever ships the material to KEC is acceptable as long as the requirements stated above are met.

25. QUALIFIED PRODUCT/MANUFACTURER LIST

The distributor, or manufacturer, of the item(s) furnished shall provide with the shipment one copy of a certificate of conformance stating the manufacturer's name and that said manufacturer is currently included on the Qualified Products/Manufacturer List for the items furnished. The

certificate shall also list the Purchase Order Number, the item specification/slash number, part number, and date code for each item.

26. INSTRUMENT CALIBRATION

The instrument(s) on this order shall be calibrated with standards that are traceable to the National Institute for Standards and Technology.

Calibration and records are to be maintained per ANSI/NCSL Z540.3-. A Certificate of Calibration containing the affirmation of an authorized representative of an authorized representative of the laboratory shall be furnished with each instrument. Calibration facility shall calibrate in accordance with applicable methods and procedures.

27. FASTENERS / HARDWARE

Hardware manufacturers and distributors are to provide and/or retain on file copies of chemical and physical test reports, certification of processes, and part of lot traceability documentation. Test reports and traceability documents shall be identified with lot or batch number, part number, and applicable specifications. All documentation is to be retained on file by the supplier for ten years, and contain an affirmation of an authorized representative. These documents are subject to inspection by KEC Quality Representatives or Government Source Inspectors.

The supplier is to send Certificates of Conformity from the manufacturer or authorized distributor stating the manufacturer's lot number. Raw materials purchased by the manufacturer to fabricate parts for this order shall be verified for specification and material compliance by chemical and/or physical tests. Test reports shall be maintained on file.

28. SOFTWARE

The supplier shall be an approved supplier or authorized developer of the software being furnished. The supplier shall provide, with the shipment, a complete software review package, as specified in the Statement of Work and/or Purchase Order. The supplier shall provide a User's Guide or Operating/Installation Instructions.

29. ESD, EOS, AND ELECTROMAGNETIC FIELD PRECAUTIONS

The item furnished on this order is sensitive to Electrostatic Discharge (ESD). Labeling, packaging and handling shall meet the requirements of MIL-STD-1686 or IPC-A-610. Magnetic media or firmware shall not be shipped or stored near strong Electromagnetic or Radioactive fields.

30. SPECIAL PROCESSES

Special processes (e.g., plating, finishing, heat treat) performed to military, KEC or prime customer specifications must be performed by special process suppliers approved and listed on the KEC Quality Approved Supplier List (QASL).

31. SUPPLIER DESIGN CHANGES

(Reference Clause IB)

32. ACCEPTANCE TEST PROCEDURE

The supplier is required to submit an Acceptance Test Procedure (ATP), 60 days prior to start of test. Acceptance by KEC must be made prior to the start of supplier testing. The Acceptance Test Procedure shall show conversion of all KEC requirements to Supplier test procedure. A detailed report of the input/output conditions of any automatic test equipment and the information needed to translate it.

KEC shall reserve the right to review and approve the screening and burn-in equipment operation for the purpose of:

Confirming operation to Source Control Drawing (SCD) criteria of screening tests.

Confirming burn-in stress level of SCD.

33. FAILURE ANALYSIS REPORTING

Failure analysis reporting is required for all catastrophic (nonfunctioning) failures that occur during screening and for any failure that occurs during qualification testing. The failure analysis shall clearly show the cause of failure, the failure mode, and corrective action to preclude future failures. Notification to KEC is required within 24 hours of occurrence.

34. INSPECTION MILESTONE SCHEDULES

Within four weeks of placement of this Purchase Order, the supplier shall submit to KEC the following:

Planned milestone schedules identifying completion of critical milestones, 100% testing, lot acceptance sample testing, and ship date. KEC shall be notified in writing of any problems that will affect a schedule change from PO requirements.

A drawing and procedure list indicating title, latest revision level, and date. A manufacturing flow chart indicating the steps of processing the documents controlling the process and the inspection points.

KEC shall be notified within forty-eight (48) hours of any manufacturing, processing or test problem related to the lot.

35. SINGLE LOT DATE CODE

Parts shall be identified by a date code indicating the date of manufacture, or in the case of hermetically sealed devices, the date of sealing. All devices furnished on this order shall be from the same manufacturer's facility and from a single lot date code.

36. X-RAY REPORTS

Parts shall be x-rayed in accordance with the specification cited with film and reports identifying parts by part number, lot number, serial number, date code, and purchase order number. Film and reports shall be shipped with the parts.

37. PRE-SEAL SOURCE INSPECTION DATA

The lot(s) control and lot(s) processing records shall be presented for KEC review prior to authorization shipment.

KEC shall reserve the right to review and approve all data and test documentation to the requirements of this purchase order and other KEC specifications prior to final acceptance. The data format shall be approved by KEC.

38. PROCEDURAL AND DATA REQUIREMENTS FOR KEC REVIEW AT SUPPLIER'S FACILITY

The following shall be available to KEC for review, but need not be shipped with the delivered product.

All processing and test methods

All design and baseline documents

All lot travelers and process travelers with dates, operators, and test results included.

39. PACKING OF ELECTRONIC PARTS

Parts furnished on this order shall be packaged individually in protected tubes, other methods that protect device leads from bonding and contamination. ESD/EOS safe packages shall be provided, if applicable.

40. WRITTEN AUTHORIZATION TO SUBCONTRACT WORK

The supplier shall notify KEC and receive KEC written approval prior to subcontracting any given line item of this purchase order.

41. LEAD-FREE CONTENT

Prohibition on lead-free tin usage (tin, tin alloys, or tin finishes with less than 3% by weight of lead (Pb)) applies to this order. A certificate of compliance stating that lead content is not less than 3% is required.

42. CRITICAL-TO-QUALITY (CTQ) CHARACTERISTICS

Critical-To-Quality (CTQ) characteristics are contained on the drawing(s) associated with this order. These characteristics require 100% inspection of each piece part of this order. Evidence of inspection of each CTQ characteristic(s) indicated on the drawing is to be documented and provided simultaneously with the delivery of hardware.

Appropriate records from the various Flight Safety Parts activities shall be retained for a minimum of 15 years or as required by the KEC Purchase Order or SOW. Records should include summary documentation (e.g., meeting minutes, log books, FMEA, safety hazard assessments, test results, inspection results, etc.) as appropriate.

43. FLIGHT SAFETY CHARACTERISTICS

Flight safety characteristics are contained on the drawing (s) associated with this order. These characteristics require 100% inspection of each piece part of this order. Evidence of inspection of each flight safety characteristic indicated on the drawing is to be documented and submitted with delivered hardware. Flight safety characteristics also require that

associated processes be frozen. Any changes must be approved by the KEC prior to the change.

Appropriate records from the various Flight Safety Parts activities shall be retained for a minimum of 15 years or as required by the KEC Purchase Order or SOW. Records should include summary documentation (e.g., meeting minutes, log books, FMEA, safety hazard assessments, test results, inspection results, etc.) as appropriate.

44. *OP and OR /F,N,D SUFFIX

The *OP and OR /F,N,D suffix to the part number indicates the part is being purchased with special instructions. The packing slip and all other documentation shall reference the suffix as it appears on the PO. If part marking is required, only the part number will be used per the drawing requirement.

45. CLEANLINESS/VISUAL INSPECTION

Due to the critical application of our product, machined parts shall be free of debris, burrs and cutting oil. This level of cleanliness will normally be ascertained through visual inspection unless otherwise indicated on the pertinent drawing, Purchase Order and/or SOW.


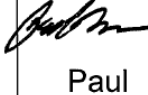

301. 100% INSPECTION DIMENSIONAL REPORT REQUIREMENT

The supplier shall furnish one copy of their internal inspection report(s) with each shipment. This report shall show actual recorded dimensions inspected. Nothing in this article shall relieve the supplier from complying with all drawings, specifications and requirements called out in the Purchase order.

Revision History

Revision	Revision Date (MM/DD/YY)	Summary of Change	Written/ Revised By	Approved By	Quality Mgmt Approval
-	9/25/13	Initial release of Keystone Engineering Quality Clauses			
A	11/15/13	1) Sect 2, Item 16: Added requirements of Pedigree Traceability and Chain of Custody with flow down to sub-tiers 2) Removed deleted items (not used)			
<u>B</u>	<u>12/20/16</u>	<u>Added requirements for source inspection authorization to release</u>	<u>Paul Lopez</u>	<u>Ray Marquez</u>	<u>Ray Marquez</u>
C	01/03/2018	<u>Added Sect. I, Item "L" for Counterfeit Parts avoidance flow down</u>	Ray Marquez	Paul Lopez	Ray Marquez
D	01/29/2018	<u>Added Section I, Item "M", for Competence of Personnel, Including Necessary Qualifications</u>	Ray Marquez	Paul Lopez	Ray Marquez
E	10/24/18	<u>Remove from Sect I, Item E: "Flight Safety Parts are covered in Section II, QA Code 65". No longer applies</u>	Ray Marquez	Paul Lopez	Ray Marquez

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