



GKN Aerospace Engine Products West
PURCHASING QUALITY NOTES

REVISION DATE:
7/15/2010

NOTE NUMBER	NOTE TEXT
000000001 07/15/2010	<p>Documented approval scopes issued by GKN Aerospace Inc., Quality Assurance department shall be adhered to at all times. When issued, the supplier shall maintain these documents for reference when servicing GKN purchase orders or providing tender in response to requests for quote.</p> <p>Supplier's facilities, contracted products, procedures and records shall be made available to GKN to verify compliance to purchase order requirements. A representative, familiar with the supplier's operations and systems, shall be provided to assist GKN in conducting surveillance activities. Access shall also be extended to GKN customers and/or regulatory agencies as applicable.</p> <p>Supplier shall maintain an effective Quality System in accordance with GKN Supplier Quality Standard, CTQS 9002, that provides for control and identification of material throughout the processing cycle, detection of nonconformance, timely corrective action and disciplines required to produce material that is representative of good workmanship. The Quality System shall be documented by the supplier's quality manual, describing the sub-systems utilized to fulfill these system requirements, including exhibits of various forms, tags and other control documents. Supplier shall maintain records essential to the effective operation of the Quality System. The system and revisions are subject to GKN review and approval.</p> <p>No substitution of material specification, size or any other nature will be allowed except by amendment on the purchase order. All materials shall be those furnished or specified by GKN.</p> <p>Maintain a system to document nonconformance, investigate and determine root cause, initiate corrective action and follow-up in order to eliminate causes of nonconformance. Any nonconformance to the purchase order or drawing requirements must be documented on GKN's Nonconforming Material Report (NCR) utilizing the GKN supplier portal for submittal of nonconformance's. Disposition of nonconformance must have formal approval by GKN engineering. Formal corrective action will be required. Supplier is liable for any cost incurred by Chem-tronics due to rework/repair of nonconforming hardware.</p> <p>The supplier shall maintain an inspection system in compliance with the requirements of GKN Supplier Quality Standard, CTQS 9002, including a measuring instrument calibration system in accordance with ISO 10012-1 or ANSI Z540-1 (latest revision). Supplier shall maintain surveillance of their material and process sources. Supplier's sub-tier purchase document shall contain all necessary data (drawings, specifications, etc.) to fulfill the applicable GKN requirements, with correct revisions indicated. Supplier is responsible for the quality of purchased materials and services and shall develop plans to assure they are appraised to the extent required. Suppliers may be required by GKN to schedule auditing of their sources of material and services to detect possible unauthorized changes to systems, methods, or processes that could affect product quality. Audits may take the form of on-site evaluations, process reviews, documentation review or a combination of these techniques to verify the source is in compliance to GKN's purchase order requirements. Audit plans are subject to GKN approval.</p> <p>Supplier shall identify all products per drawing and/or purchase order requirements. In the event the hardware produced is an assembly/sub-assembly, part numbers and heat numbers of each component shall be documented. All hardware must be traceable back to its specific material heat lot/batch. Records of traceability shall be maintained by the supplier as part of this objective evidence of quality control and acceptability.</p>
000000002 05/10/2002	The supplier shall maintain a Quality System in compliance with the requirements of MIL-Q-9858A.
000000003 05/10/2002	The supplier shall maintain a Quality System in compliance with the requirements of General Electric specification S-1000.
000000004 05/10/2002	The supplier shall maintain a Quality System in compliance with the requirements of Pratt & Whitney specification ASQR-01. Articles contained within this purchase order are for Pratt & Whitney end use and must be controlled per applicable purchase order requirements.
000000005 07/15/2010	The supplier must hold written approval from either Rolls-Royce per RR9000:SABRe or GKN approval per CTQS 9002 (specifically acknowledged, by specification title, in the written approval aforementioned in Note 1). Any purchased material or subcontracted services must also be from RR9000:SABRe or CTQS 9002 approved suppliers.



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To satisfy this requirement, copies of the approval letter(s) must be delivered with the first shipment. This also applies to any/all sub-contractors.

This quality requirement also applies to raw material suppliers of non-MSRR materials used for the manufacturer of "non-classified" parts only for Rolls-Royce. The material, however, must be fully tested prior to release. This requirement does not cover forging suppliers controlled to MSRR 9951. This quality requirement also applies to process/services not considered "sensitive" per Rolls-Royce specifications/drawings (RR SQA delegated approval letter, Addendum 3).

000000006
07/15/2010

If software is involved in performance of work for GKN, the supplier shall maintain software control procedures that comply with DOD-STD-2168 software quality program requirements.

Software quality programs are required when digital configuration data is used during realization of the product. This applies to product configuration data, coordinate inspection data, and digital data developed to control automated processes (e.g. CNC machining).

000000007
05/10/2002

The supplier shall maintain a Quality System in compliance with the requirements of Honeywell specification SPOC 002 and the Quality System shall be to the SAE AS9000 standard. Registration to ISO 900x, D1-9000, QS9000, EN9000 or JC 9000 is acceptable providing the supplier has defined deltas between AS9000 and their current system and has evidence within the supplier quality system submitted to Supplier Performance Management Center (1-877-825-3794).

000000008
09/06/2003

HUMAN SPACE FLIGHT REQUIREMENTS

FOR USE IN HUMAN SPACE FLIGHT. MATERIALS, MANUFACTURING, AND WORKMANSHIP OF HIGHEST QUALITY STANDARDS ARE ESSENTIAL TO ASTRONAUT SAFETY.

This clause will be inserted in all subcontracts and purchase orders for such items down to the lowest tier. If you are able to supply the desired items with a quality which is higher than that of the items specified or proposed, you are requested to bring this fact to the immediate attention of the purchaser.

STAMP WARRANTY

Stamp warranty is a stamp or signature that is the professional, individual warranty (guarantee) that the practitioner understood the work to be performed and personally performed or witnessed the work. Stamp warranty also guarantees that the task is performed literally as stated in the build record. The practitioner's job is to perform all tasks exactly as documented in the work instructions.

Any condition/situation in which an individual feels would compromise their stamp/signature warranty should be questioned and resolved prior to the application of the stamp/signature.

The following objectives must be satisfied in order to produce quality products guaranteed to meet customer requirements.

- A. Build documents shall correctly reflect specifications and drawing requirements:
- B. All processes specified in build documents are being performed exactly as stated.
- C. Personnel are trained and or certified to perform required operations.
- D. Planning and other instructions are clear, correct, easily executed, and can be verified.
- E. Only authorized and acceptable materials and components are used to manufacture hardware.

Remember:

Doing it right is mandatory, and you the practitioner, are the ultimate guarantor of Mission Success. Your signature represents your company's and your integrity.

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The supplier shall maintain a Quality System in compliance with the requirements of GKN Aerospace document CTQS 9002.



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000000010 05/10/2002	The supplier shall maintain a quality system in compliance with the requirements of the Short Brothers plc. specification SB/QC/01.
000000011 05/10/2002	Supplier must be approved by the National Aerospace and Defense Contractors Accreditation Program (NADCAP) for the process being performed. Certification of conformance must reflect approval expiration date.
000000012 05/10/2002	Seller shall not disclose (oral, visual, written or otherwise) or provide such drawings, specifications and other technical data or goods to any foreign person (including but not limited to seller's employees, seller's subcontractor's, etc) or foreign firm or institution without first obtaining prior authorization. A "foreign firm or institution" means those organized or existing under the laws of a country other than the United States, its territories, or possessions. The term includes any agency or business organizations that are owned or substantially controlled by foreign governments, firms, institutions or individuals. A "foreign person" does not include United States citizens and corporations and permanent resident aliens of the United States.
000000013 05/10/2002	Warning: This document contains technical data whose export is restricted by the arms export control act (Title 22, USC., Sec2751, ET SEQ.) Or the export administration act of 1979, as amended, title 50, U.S.C., App. 2401, ET SEQ. Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with the provision of AFR 80-34.
000000014 05/10/2002	The supplier shall maintain a Quality System in compliance with the requirements of Rolls-Royce corporation Supplier Quality Manual.
000000015 05/10/2002	Any purchased raw material or subcontracted services under this order must be from Rolls-Royce corporation external laboratories approved suppliers. Independent laboratory verification of raw material shall be in accordance with Rolls-Royce corporation Supplier Quality Manual.
000000016 12/18/2003	Supplier shall maintain current third party certification to ISO 9001.
000000017 12/18/2003	Supplier shall maintain current third part certification to AS9100.
000000020 07/15/2010	Articles contained within this purchase order are for US Government end use and must be controlled per applicable purchase order and regulatory requirements. OEM, Original Equipment Manufacturer (e.g. Pratt & Whitney, General Electric, Boeing, etc.), drawings and/or specifications used in the execution of this purchase order must be supplied and controlled by GKN Aerospace. Said documents shall exhibit evidence of issuance from the U.S. Government or authorized agency of the same. Tools used in the fulfillment of this purchase order shall not be owned by an OEM (see above). The supplier shall submit a tool list (including tool identification and ownership) to GKN Aerospace. Written authorization to use the proposed tools shall be secured from GKN Aerospace prior to the initiation of any work and retained by the supplier. Work performed in servicing this purchase order shall be in accordance with the authorized tool list. Subsequent modification to an authorized tool listing shall be authorized and retained as stated above. As applicable, part marking shall be applied in accordance with the appropriate drawing (and its subordinate specifications) with the following modifications: <ol style="list-style-type: none">1) Part Number shall be as stated by the applicable Purchase Order line item.2) Drawing revision shall be the drawing revision applicable to the Purchase Order line item.3) Supplier or vendor numbers shall be the GKN assigned number as reflected in this purchase order



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preceded by the letters "VC" (i.e. VC#####).

- 000000021**
08/11/2004
- All sources of raw material (wrought, cast, forged, etc.), detail items (assemblies, components, hardware, etc.), and significant processes (heat treat, welding, chemical processing, coating, testing, etc.) shall be controlled by the supplier and restricted as follows:
- Sources for raw materials and detail items shall be currently approved by the OEM or CEA.
 - Sources to be employed for significant process shall be currently approved by an OEM, Nadcap, or the CEA.

The supplier shall perpetuate flow-down of the requirements stated herein to their sub-tiers as appropriate.

For the purposes of this quality note clause, the following definitions apply;

CEA *Cognizant Engineering Authority – The USAF engineering branch chief for the respective propulsion system.*
OEM *Original Equipment Manufacturer – The source or sources primarily responsible for the design and development of aircraft turbine engines for a US DoD activity or a NATO country.*
Nadcap *The Performance Review Institute branch responsible for the accreditation of significant process sources.*

- 000000023**
10/04/2002
- Work to be accomplished in performance of this purchase order is directly related to a Lockheed Martin Aeronautics Company PO and must be accomplished in accordance with process specification on purchase order and Lockheed Martin Aeronautics Company Appendix QJ." A copy of this purchase order shall be maintained on file and be made available for review, upon request, by Chem-tronics or by Lockheed Martin.

A Certificate of Conformance shall be provided that includes

1. a unique certification number;
2. title and specification number (including revision letter) of the process;
3. name and address of the process or NDT facility;
4. Lockheed Martin assigned processor number;
5. date the C of C was issued;
6. purchase order part number;
7. quantity of parts (to include quantity accepted/rejected);
8. signature and title of authorized quality agent of seller; and
9. fracture durability classification or serialization when required.

Completed parts shall be suitably wrapped, boxed or racked to guard against shipping damage. Rust or corrosion inhibitors shall be applied in accordance with the supplemental requirements of this purchase order if applicable.

- 000000024**
05/10/2002
- All special processes shall be performed only by sources that are listed in the Coordinating Agency for Supplier Evaluation (C.A.S.E.) register and approved by Aerojet Propulsion Division (C.A.S.E. Member 030).

- 000000025**
05/10/2002
- Supplier shall include the following with each shipment: certification(s) identifying the processor, part number, purchase order number, process specification number, identification of process method used, acceptance criteria document and the applicable "quality control standard" (QCS). Certifications must contain the document(s) revision(s).

- 000000026**
05/10/2002
- All material furnished or processing performed under this order must be by a source approved by General Electric.

- 000000027**
05/10/2002
- All material furnished or processing performed under this order must be by a source approved by Pratt & Whitney.

- 000000028**
05/10/2002
- All material furnished or processing performed under this order must be by a source approved by Rolls-Royce per RR9000:SABRe. Any purchased material or subcontracted services must also be from RR9000:SABRe approved suppliers. To satisfy this requirement, copies of the approval letter(s) must be delivered with the first shipment. This also applies to any/all sub-contractors.



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	<p>This quality requirement may apply to those components/processes/sources classified as "sensitive" by Rolls-Royce. This requirement also applies to any/all forging suppliers (regardless of classification) controlled per MSRR 9951 that includes any/all subtiers. (RR SQA delegated approval letter).</p> <p>(Note to GKN's purchasing/engineering dept: Quality requirement 55 also applies.)</p>
000000029 07/15/2010	All material furnished or processing performed under this order must be by a source approved by Honeywell. GKN purchasing shall not place orders with any other supplier(s) than specified on the GKN Bill of Material (B.O.M), MFG or Quality notes.
000000030 07/15/2010	All materials furnished or processing performed under this order must be by a source approved by The Boeing Company per D1-4426. The supplier shall confirm that the Boeing Division and aircraft model have been properly delineated in the GKN purchase order and ensure that this information is flowed down to any subtiers as appropriate.
000000031 05/10/2002	Reference General Electric specification S-343 for aluminum extrusion product control. Copy to be provided by Chem-tronics.
000000032 05/10/2002	The following requirements apply for forgings and flash welded rings: 1) applicable specifications S-306 and S-9013. 2) raw material is for a G.E. application. 3) G.E. quality plan is required as follows. A) rolled rings and round, flat forgings: 0 degrees and 180 degrees testing of all specifications properties, including "capability" test. B) other forgings: testing of specification properties, including "capability", to represent the thickest and thinnest sections. C) flash welded ring: base metal and weld test per specification, including "capability" test. 4) standard notes applicable to raw materials subtiers per S-306 Table II applies: lab certs, first article, billet/bar cert retention and NDT certs.
000000033 05/10/2002	The following requirements apply for castings. 1) applicable specifications, S-310, S-202, S-258 and S-301. 2) raw material is for a G.E. application. 3) raw material source substantiation required per S-310, Table 1. 4) standard notes applicable to raw materials subtiers per S-310, Table III applies: certificates of test, laboratory test report, radiographic film and quality plan and first article inspection.
000000034 05/10/2002	All material or processing performed under this order that have been qualified by substantiation testing shall not be deviated from without written approval from GKN.
000000035 07/15/2010	Engineering Source Approval per PWA 370 applies to this purchase order. Supplier shall maintain a system that ensures Pratt & Whitney approval of manufacturing plans and that all process audit requirements are met. Copies of P&W form 4692 shall be furnished to GKN Aerospace Quality Engineer prior to shipment of first lot and after any subsequent changes.
000000049 07/15/2010	The supplier shall submit to GKN, prior to production, a revision controlled manufacturing plan that outlines the sequence and sources of operations/processes to be applied in the execution of the contract. Once submitted to GKN, no changes in sequence or sources are permitted without written approval from GKN.
000000050 07/15/2010	The supplier shall submit to GKN, prior to production, a manufacturing plan, identified with a unique number and revision level, detailing all materials, operations, processes and tooling required to produce the hardware. Plan shall include any sub-tier's manufacturing plan. Manufacturing plan shall show evidence of quality review and shall include inspection steps necessary to ensure quality. Once submitted to GKN, no changes in sequence or methods are permitted without written approval from GKN.
000000051 07/15/2010	Registered components. The supplier shall submit to GKN, prior to production, a manufacturing plan identified with a unique number and revision level, detailing:



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- A) the methods and the type of critical processing to be used.
- B) the location within the processing cycle where inspections will take place.
- C) the attributes of the products which will be inspected at each inspection point.
- D) the materials and methods of preservation and packaging to be used to protect the product.
- E) the handling and transport action precautions necessary to protect the product.

This plan shall include any sub-tier's manufacturing plan. Once submitted and approved by GKN, revisions or variations to any of the above listed controls shall not take place without prior written approval from GKN.

000000052
07/15/2010

Supplier shall maintain an effective system for tracking Material Safety Data Sheets (MSDS) for all products supplied to GKN. An appropriate MSDS will be provided to GKN, prior to the first delivery, for all products required by 20 CFR 1910 to have a MSDS.

The supplier shall provide the MSDS information unless a written waiver has been received from GKN. Failure to provide the required MSDS will result in the prohibition of orders released to the supplier.

In addition, all chemical substances or products that have chemical substances as ingredients, that are supplied from outside the United States, must have a certification from the supplier that the material is on the Toxic Substance Control Act (TSCA) inventory list. Materials imported from outside the United States that are not on the TSCA inventory list cannot be sent to GKN. Payments for materials sent to GKN that are not properly identified on the TSCA list will be withheld pending approval and acceptance by GKN environmental engineering.

000000053
05/10/2002

Distributors shall meet the applicable requirements of SAE STD AS 7103, Level C - "Requirements For Accreditation of Pass Through Distributors" or AS 7104 - "Requirements For Accreditation of Full Distributors" and/or applicable portions of SAE STD AS 9000 - "Aerospace Basic Quality System Standard".

Distributor shall assure traceability of all purchased products to the source of manufacture and their related acceptance documents. The actual source of all material shall be identified.

Distributor shall not modify, rework, or repair material in-house or by subcontracting unless approval is obtained from the Purchaser or the work is performed by the actual manufacturing source of the material.

000000055
07/15/2010

GKN purchasing shall not place orders with any other supplier(s) than specified on the GKN BOM, Manufacturing or Quality Notes.

000000056
07/15/2010

Documentation of raw material certifications (chemical and mechanical properties) and variable inspection (including laboratory testing) data are required for 100% of the items fabricated under this purchase order. These documents shall be kept on file at the supplier's facility for 30 years from the delivery date and shall be available immediately to GKN upon request.

000000058
07/15/2010

Thermocouple Certification requirements:

Per AMS 2750 - 3.1.1.1 - Calibration: Sensors shall have a certificate of compliance or report of calibration that identifies the following:

- Source of the calibration data
- Nominal test temperature
- Actual test temperatures readings
- Calibration technique
- Correction factor for each calibration temperature traceable to NIST or other recognized National Standard.

Calibration technique shall comply with ASTM E 220, ASTM E 207, or other national standard.

000000060
07/15/2010

Raw materials procured in fulfillment of the purchase order must include the original mill source's certified measured test report providing mill identity and mill chemical and mechanical properties defined by the specification and furnished to GKN for each heat lot number.



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000000061 07/15/2010	Raw material certifications of chemical and mechanical properties shall be confirmed by an analysis from an independent laboratory not associated with the producer of the material. Testing shall be to the extent required to verify full compliance with the material specification. (e.g. AMS - acceptance tests). Obtain written approval from GKN for any laboratory planned for use. A Copy of the independent laboratory certification overchecks shall be included in the C of C package.
000000062 07/15/2010	The supplier shall provide sufficient material per heat lot for complete testing by GKN. Material supplied shall bear the original mill markings, when possible, and shall have the physical attributes (e.g. grain direction, size, etc...) to support the testing requirements of the applicable specification(s). If original mill markings can not be included on sample it shall be marked with the specification number, revision and heat lot number for traceability.
000000063 07/15/2010	Supplier shall certify that only GKN furnished material was used in the fabrication of the product. The supplier's certification must list GKN assigned "R" numbers, serial numbers and/or work order numbers as applicable to the order and delivery. Certification must include a statement that "the material has not been subjected to any processes which may have chemically or metallurgically altered the material, except as allowed by purchase order, specification or drawing".
000000064 05/10/2002	Supplier shall submit a certification which includes a cure of manufacturing date for material whose acceptability is controlled by age. Both the cure date and shelf life shall be listed on the container and on the document certifying the material.
000000065 07/15/2010	If the supplier is a PWA approved LCS supplier reports shall include an equivalent statement to "Parts have been controlled to P&W requirements for LCS per P&W MCL Manual Section F17". If quality note 61 and 62 is a requirement of this order it shall be waived. LCS suppliers need not submit independent lab certification or test material to GKN. For castings and forgings, the actual test results are not required provided an acceptable LCS certification is provided. Parts are for P&W end use.
000000066 05/10/2002	Raw or partially machined castings require laboratory retest. The retest will be no less than that required to verify the material is of proper type and composition and is otherwise suitable for production. Sample tabs or products may be used for hardness, chemical and/or metallurgical verification inspection unless directed otherwise by engineering requirements. These tabs shall be taken from each production/heat lot. This is in addition to supplier's material certification.
000000067 05/10/2002	Any laboratory testing that may be required by General Electric, must be performed by a laboratory that has been approved to GE S-400. All certifications of compliance for laboratory testing must state; "GE S-400 approved".
000000068 07/15/2010	If the revision levels of specifications relevant to this order are not specified, the latest revision shall be used and documented on all certifications. To comply with this requirement the relevant specifications and revision level must be reported on the vendor's C of C, inspection reports, first articles, lab reports, etc.
000000075 07/15/2010	Supplier must include with its certification package, test reports provided from an independent "NADCAP" approved materials testing laboratory.
000000084 09/06/2003	Specialty metals incorporated in articles delivered in fulfillment of this contract shall be melted in the United States unless allowed otherwise by DFARS 252.225-7014 Alternate I. The following Defense Federal Acquisition Regulation Supplement (DFARS) requirement applies to this agreement, and is binding on Supplier and each of its subcontractors:



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	<p>252.225-7014 Preference for Domestic Specialty Metals (Alternate I)</p> <p>Access to the applicable DFARS can be achieved via the website below:</p> <p>http://www.acq.osd.mil</p> <p>The Supplier shall include the terms of this clause in every subcontract or purchase order awarded under this contract in accordance with DFARS 252.225-7014 Alternate I.</p>
<p>000000085 07/15/2010</p>	<p>Documented inspection data is required for 100% of the items manufactured under this purchase order. Documents shall be kept on file at the supplier's facility and shall be made available to GKN upon request.</p>
<p>000000086 07/15/2010</p>	<p>Variable inspection data for each individual characteristic is required for 100% of the items manufactured under this purchase order. Sampling may be implemented where the process capability is known and is approved by GKN, prior to application, provided it's use assures fulfillment of purchase order requirements.</p> <p>A photocopy of the variable inspection data (100%) or variable sampling data shall accompany the shipment of parts.</p> <p>Sampling of nondestructive testing (NDT) is not allowed.</p>
<p>000000087 05/10/2002</p>	<p>Full compliance to the engineering requirements shown on the purchase order and drawing is mandatory. Material review board acceptance or repair of any drawing feature or referenced specification is not permitted.</p>
<p>000000096 07/15/2010</p>	<p>The following information is derived from GKN - Chem-tronics, Inc. Operations Manual O.M. 4.4.32 as it pertains to certified cutting tools only. If the supplier/manufacturer has any questions regarding these requirements, contact the relevant purchasing agent. The supplier awarded this order must comply with the following requirements.</p> <p>8.6 Supplier/Manufacturer</p> <p>8.6.1 The tooling supplier/manufacturer is responsible for assuring any/all CT purchase order and drawing requirements are met by providing a "certificate of conformance" referencing the appropriate part number and revision level with each shipment. In addition, a dimensional report must also be supplied for those identified features as instructed via CT drawing for each individual tool.</p> <p>8.6.2 The tooling supplier/manufacturer must physically identify designated "certified cutting tool(s)" with the tool/file number and associated revision that matches the CT supplied drawing.</p> <p>8.6.3 The tooling supplier/manufacturer to physically identify tool with a unique identifying mark/designator, assigned by the supplier, to allow full traceability of each tool back to the associated order. (P.O./certificate of conformity/dimensional report/etc.)</p> <p>8.7 Regrinds/Resharps</p> <p>8.7.1 CT's tooling engineer is responsible for identifying/authorizing those tools which can be resharpened and communicating such tools to the appropriate department(s).</p> <p>8.7.2 Any/all regrinds/resharps must be in accordance with the CT supplied drawing requirements.</p> <p>8.7.3 The supplier is responsible for assuring any/all CT drawing requirements are met by providing a "certificate of conformance" referencing the appropriate part number and revision level with each shipment. In addition, a dimensional report must also be supplied for those identified features as instructed via CT drawing for each individual tool.</p> <p>8.8 Test-type development tools</p> <p>8.8.1 Any/all test-type tools shall be identified by the tooling engineer and stipulated as such via the purchase</p>



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order.

8.8.2 Supplier to physically identify any/all "test-type" tools used for development by including the word "test" on the tool appropriately. These tools must not be released into production/stores/tool crib and/or used on components without written authorization by the cognizant ME/QE/MQE.

000000097
07/15/2010

All perishable cutting tools supplied under this purchase order shall conform to the requirements of GKN - Chem-tronics, Inc. Operation Manual 4.4.33 and Chem-tronics, Inc. drawings where applicable. When tools are reground/reconditioned, original manufacturer's specifications also apply. Where tools are designated "Certified Cutting Tools" operations manual 4.4.32 section 8.0 is an additional requirement to those stated above (see note code 96).

000000099
07/15/2010

A PWA SQAR/QASR/DQCR buyoff is required before this hardware can ship to GKN. Documentation of the buyoff is required.

000000100
07/15/2010

This order is subject to GKN source inspection. GKN quality control must be notified forty-eight (48) hours in advance of the time the articles or processes are ready for inspection or test.

000000101
07/15/2010

Government inspection is required prior to shipment from your plant. Upon receipt of this order promptly notify and furnish a copy to the government representative normally servicing your plant so that government inspection can be appropriately planned. If a government representative does not service your plant, contact the appropriate government inspection office in your area. If you cannot locate the government office, our purchasing agent should be notified immediately. If nonconformances are detected upon receipt at GKN, you will be notified via a supplier corrective action request and must coordinate corrective action with your government representative.

000000115
07/15/2010

A first article inspection shall be performed with variable data recorded for all drawing characteristics and referenced specifications per AS9102, latest revision. First article to be approved by GKN prior to release of multiple units for production. Copy of the first article inspection report must accompany the first shipment and the packing slip must vividly indicate that this shipment is a "first article". First article requirements apply to all revisions affecting hardware configuration for 100% of the affected characteristics.

000000125
5/21/2008

A Certificate of Conformance (C of C) shall be provided with each delivery of any item(s), material(s) and/or service(s). This can be a separate document or integrated into the packing sheet/list.

- Note: It is understood (by the supplier and GKN) that with the submittal of the Certificate of Conformance the supplier is providing legal confirmation that all delivered item(s) comply with the purchase order requirements and to the following:
 - The product has not been subjected to any processes which may have chemically or metallurgically altered the material, except as allowed by the purchase order and its subordinate requirements.
 - When the subcontract activity involves GKN furnished material (i.e. subcontract services), the supplier is certifying that the specific GKN furnished material (furnished for the specific contract) was used in the fabrication of the product.

All Certificates of Conformance shall include as a minimum:

- 1) Supplier's company name and address
- 2) Name of manufacturer, if different from supplier
- 3) GKN Purchase order number and (when applicable) P.O. line item(s).
- 4) Certification date.
- 5) Supplier's Pack Slip Number
- 6) Quantity.
- 7) Part number and revision as assigned by the purchase order.
- 8) Any additional information as specified by the purchase order and its subordinate requirements.
- 9) All NCR (Nonconformance Report) number(s) applicable to the delivered item(s). ie: "SG0001234"



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- Applies”
- 10) A statement that materials and/or services provided is in conformance with the purchase order requirements. Listing any special process by specification and revision level. (ie: NDT, Heat treat, etc.)
 - 12) Signature and/or stamp of Supplier’s authorized Quality representative (secured computer-generated signatures are acceptable).
 - 13) The information from “A” or “B” below as applicable.
- A. Supplier Procured materials (raw, component or assembly) shall include:**
- The drawing designation, drawing revision and engineering change order(s) as applicable.
 - Material specification and revision for each unique material included in the delivered product.
 - Specific material lot or material batch numbers for each unique material included in the delivered product.
 - Serialization if specified by the governing requirements.
- B. Processing or service shall include (GKN Supplied Material):**
- GKN assigned “R” numbers, serial numbers and/or work order numbers as applicable to the order and delivery.
 - A list of any GKN work instruction(s) invoked by the purchase order (e.g. operation sheet, etc.) including their revision levels as applicable.
 - Specifications and revision levels for all special processes invoked by the purchase order.
 - A statement that: “The product has not been subjected to any processes which may have chemically or metallurgically altered the material, except as allowed by the purchase order and its subordinate requirements.”

0000000126 Supplier will be provided with a quantity of GKN standard "certificates of conformance" forms. Supplier shall complete the "C of C" as appropriate for the requirements of the order. The "C of C" must reflect the revision level of all drawings and/or specifications that form a part of the order, be signed by a responsible representative, and submitted with each shipment of items under this order.
07/15/2010

0000000135 Supplier shall submit certifications with procedure number and revision level, for thermal treatment, including items as specified below:
05/10/2002

0000000136 Time/temperature chart for furnace.
05/10/2002

0000000137 Independent time/temperature for furnace load.
05/10/2002

0000000138 Sketch of thermocouple placements with key to multipoint recording, if utilized.
05/10/2002

0000000139 Vacuum certification.
05/10/2002

0000000140 Provide the following documentation with each part delivered.
05/10/2002

1. Furnace load charts (time/temp)
2. C of C stating;
 - A. Braze temp
 - B. Braze soak time
 - C. Cool down temp/time
 - D. Part thermocouple recordings
 - E. Part number/P.O. number/operation revision level

0000000150 Supplier shall submit NDT test results (performed by a NADCAP and / or OEM certified NDT facility) identifiable with acceptance requirements as specified below:
07/15/2010



GKN Aerospace Engine Products West
PURCHASING QUALITY NOTES

REVISION DATE:
7/15/2010

NOTE NUMBER	NOTE TEXT
000000151 07/15/2010	Radiographic certification in accordance with ASTM E2104 of the current revision level and/or all purchase order referenced specifications and revision level for each radiographic inspection to be performed.
000000152 07/15/2010	Penetrant inspection certification in accordance with ASTM E1417 of the current revision level and/or all purchase order referenced specifications and revision level for each penetrant inspection to be performed.
000000153 07/15/2010	Magnetic particle certification in accordance with ASTM E1444 of the current revision level and/or all purchase order referenced specifications and revision level for each magnetic particle inspection to be performed.
000000154 07/15/2010	Ultrasonic inspection certification in accordance with all purchase order referenced specifications and revision level for each ultrasonic inspection to be performed.
000000155 07/15/2010	Pressure test certification in accordance with all purchase order referenced specifications and revision level for each pressure test inspection to be performed.
000000156 07/15/2010	Leak test certification in accordance with all purchase order referenced specifications and revision level for each leak test inspection to be performed.
000000157 07/15/2010	Radiographic film must conform to ASTM E1815 of the current revision level, class I or class special film speeds, only (A,B,C or D).
000000158 07/15/2010	Radiographic technique sheets must conform to the requirements of ASTM E2104 of the current revision level and/or all purchase order referenced specifications and revision level for each radiographic inspection to be performed.
000000165 05/10/2002	Supplier shall submit a certification of plating per applicable specification.
000000166 05/10/2002	Supplier shall submit a certification of anodize per applicable specifications.
000000185 07/15/2010	A certified tool list and an 8" x 10" minimum photograph of each GKN owned tool must be presented at time of shipment. Digital photographs are acceptable.
000000186 07/15/2010	Acceptance of production tooling on this order shall be contingent upon inspection and acceptance by GKN. The tooling and dimensional samples produced by this tooling must conform to the tolerance limits of the engineering drawings and specifications stated on this order.
000000187 05/10/2002	All weld filler material shall be controlled per PWA MCL F-53 and PWA-300.
000000188 05/10/2002	Weld wire shall be identified in accordance with AMS 2816.
000000189 05/10/2002	An overcheck sample of no less than 6 inches in length shall be provided for each heat lot of weld wire. This sample shall be attached to the outside of the weld wire packaging to allow overcheck testing without disturbing the packaging of the production material.
000000999 05/10/2002	No quality notes apply

THIS DOCUMENT IS SUBJECT TO PERIODIC REVISION.



**GKN Aerospace Engine Products West
PURCHASING QUALITY NOTES**

REVISION DATE:
7/15/2010

NOTE NUMBER

NOTE TEXT

These quality notes are revision sensitive. It is the supplier's responsibility to ensure that the most recent version of this document is "in hand" upon acceptance of a GKN Aerospace Chem-tronics, Inc. purchase order. The applicable revision of this document directly correlates to the purchase order acceptance date. Use of this web-based document is contingent upon specific reference to the same via the Chem-tronics Purchase Order.

CONTROLLED RESIDENCE: [HTTP://WWW.CHEM-TRONICS.COM/PROCUREMENT.HTM](http://www.chem-tronics.com/procurement.htm)

The Quality Notes listed in this document are applicable to purchase orders for the following GKN Aerospace Engine Products West sites only:

GKN Aerospace – San Diego (Including the Aviation Repair Service Group)

1150 West Bradley, El Cajon, California 92020, United States of America
Tel.: +1 619 448 2320 | Fax: +1 619 258 5270 | Website: www.chem-tronics.com

GKN Aerospace – Mexicali

Circuito Siglo XX1 no. 1974, Parque Industrial EX-XX1, Colonia Rivera, Mexicali BC, Mexico 21290
Tel.: +52 686 905 5700 | Website: www.chem-tronics.com

GKN Aerospace – ASTECH Engineered Products

3030 Red Hill Avenue, Santa Ana, California 92705-5866, United States of America
Tel.: +1 949 250 1000 | Fax: +1 949 250 4982 | Website: www.astechmfg.com

GKN Aerospace – Kent

Thermal Joining Center, 20231 72nd Avenue South, Kent, Washington 98032, United States of America
Tel.: +1 253 766 7600 | Website: www.chem-tronics.com