

KOLLMORGEN E/O DIVISION
Purchase Order Quality Assurance Requirements
Updated: 8/18/2011

A01 The following seven paragraphs apply to all purchase orders (Paragraphs 001 through 004, Paragraphs 008, 009 and 015): All other QA codes, if applicable, will be indicated separately on the Request for Quotation and any resulting Purchase Order(s).

Procurement QA Code
<p><u>001 Para. 1 - Surveillance.</u></p> <ul style="list-style-type: none">▪ Seller must allow the Kollmorgen representative access to his facility. Access to any areas which involve proprietary processes or intellectual property will require an agreed to arrangement between the Buyer and the Seller.▪ The US Government has the right to inspect, at any reasonable time, any or all of the work performed on US Government contracts.
<p><u>002 Para. 2 - Non-Conformances</u></p> <ul style="list-style-type: none">▪ Material Review Board authority is not granted to the Seller. The Seller shall not deliver non-conforming material to Kollmorgen, unless Kollmorgen Quality Engineering has previously approved a Vendor Disposition Request (VDR).▪ The VDR form is available at http://www.eo.kollmorgen.com/suppliers/▪ Unauthorized Repairs/Rework: No repair or rework shall be allowed outside of the specific specification limits, (i.e., welding, reheat-treat, insert removal, re-installation, etc.) unless Kollmorgen Quality Engineering has previously approved a Vendor Disposition Request (VDR).▪ The approved VDR shall be included with the part/documentation package when delivered to Kollmorgen.
<p><u>003 Para. 3 - Corrective Action.</u></p> <ul style="list-style-type: none">▪ When requested, Supplier is obligated to perform a Root Cause/Corrective Action investigation for non-conforming material detected at Kollmorgen and to furnish a written response within 15 days
<p><u>004 Para. 4 - Revision of Specifications.</u></p> <ul style="list-style-type: none">▪ Supplier shall build to the revision listed on the Purchase Order.▪ Part substitution shall not be allowed. The exact part number as identified on the Purchase Order (MIL-Spec or Supplier Part Number), or the exact part number identified in the purchase item drawing shall be provided.
<p><u>005 Para. 5 - Government Source Inspection.</u></p> <ul style="list-style-type: none">▪ Government Source Inspection (GSI) is required prior to shipment of product from your plant▪ Immediately notify government representative that GSI has been invoked, upon receipt of the order▪ In the event that the government office or representative can not be located, the Kollmorgen Buyer must be notified, immediately▪ Evidence of GSI must accompany each shipment

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006 Para. 6 - Kollmorgen Source Inspection.

- Kollmorgen Source Inspection (KSI) is required prior to shipment of product from your plant
- The KSI performed may include witnessing of Final Acceptance Testing, Final Acceptance Inspection and/or review of supporting in-process records
- Notify the Kollmorgen Buyer seven (7) days in advance of items ready for source inspection
- Evidence of KSI, via a completed Quality Assurance Supplier Report, Kollmorgen Form A-92, must accompany each shipment.

008 Para. 8 – Quality System Requirements.

If the supplier uses facilities other than their own, that facility is subject to and shall adhere to the same conditions of the Kollmorgen Purchase Order. All certifications submitted, as objective evidence must indicate the name and location(s) of the facility providing the service/material.

The supplier's Quality Management System, at a minimum, shall address the following ISO 9001 requirements:

1. A current, documented Quality System Manual shall be in place
2. Control of Documents
3. Control of Records
4. Management Review
5. Competence, Training and Awareness
6. Sub-Contractor/Supplier Certification and Management
7. Control of Monitoring and Measuring Equipment
8. Monitoring and Measurement of Customer Satisfaction
9. Internal Audits
10. Monitoring and Measurement of Quality Management System Processes
11. Monitoring and Measurement of Product
12. Control of Non-conforming Product
13. Continual Improvement, Corrective Action, and Preventive Action

Objective evidence of all inspection/ tests used to verify or demonstrate compliance with applicable specifications must be available for review and retained as specified in the [Federal Acquisition Regulation \(FAR\), section 4.703](#), unless specified differently in the Kollmorgen contract.

Kollmorgen reserves the right to require failure analysis on any or all failures that may occur that are associated with the item(s) delivered on this P.O.

Kollmorgen and Kollmorgen's customer and/or a government representative reserve the right to perform an inspection and observe the performance of supplier's work on Kollmorgen products at the supplier's facility.

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009 Para. 9 – Counterfeit Parts Prevention

- The Supplier shall ensure that only new materials are used in products required to be delivered to Kollmorgen.
- To further mitigate the possibility of the inadvertent use of counterfeit parts, the Seller may only purchase components and parts procured directly from the Original Equipment Manufacturers (OEMs), through the OEM's authorized distribution chain, or if through an Independent Distributor, ***Supplier shall have on file for Kollmorgen OEM documentation that authenticates traceability of the components to that applicable OEM.***
- If the required items cannot be procured from these sources, use of product without appropriate traceability documentation from independent distributors (brokers) or other sources is not authorized unless first approved in writing by Kollmorgen.
- The Seller must present complete and compelling support for its request and include in its request all actions to ensure the parts thus procured are legitimate parts.

010 Para. 10 – Qualification Testing

Qualification tests shall be performed on the first system produced by a supplier who has not previously completed Qualification Testing.

- The tests shall consist of a Factory Acceptance test, a Qualification test and a follow up Factory Acceptance test conducted in accordance with the applicable item specification.
- The supplier shall provide Kollmorgen with a reproducible, signed copy of a Qualification report documenting all test results and certifications as required in the item specification.
- The design Qualification test shall be performed on a unit as nearly identical as possible in design to units produced through the remainder of the contract.

011 Para. 11 - Test Data.

Supplier to provide results of all final acceptance tests performed to determine acceptability of each part delivered.

Test data should include:

- Kollmorgen part number and revision
- Kollmorgen Purchase Order number
- Supplier part number (if applicable)
- Date of test(s) performed
- Serial number(s)
- Identity of person that performed the test
- Acceptance criteria used
- Results of tests performed
- Supporting documentation.
- Supplier's QA rep. approval with typed name, signature, title and date.

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012 Para. 12 – Dimensional Inspection Data.

Supplier to provide results of inspection performed to determine acceptability of each part delivered.

NOTE: A Certificate of Conformance does not satisfy the requirements of this code.

Inspection results should include:

- Kollmorgen part number and revision
- Kollmorgen Purchase Order number
- Supplier part number (if applicable)
- Date of test(s) performed
- Serial number(s)
- Identity of person that performed the inspection(s)
- AQL used for each requirement
- Acceptance criteria used
- Results of inspection(s) performed

013 Para. 13 - First Article Inspection/Test.

First Article Acceptance is required for the part number supplied.

The supplier shall submit a reproducible, signed copy of a First Article Report stating recorded inspection and test variable data for all characteristics, requirements and parameters. The Supplier shall record all measurable characteristics (i.e. drawing dimension, tolerance, measured dimension, electrical tests, etc.), including a verification of drawing notes. This report shall document acceptance of each measurable characteristic. The supplier shall also provide applicable raw material and special process certifications.

Once a First Article Report has been supplied for the part number, the requirement for First Article Inspection has been satisfied for future purchases of this part number, unless:

- The part is purchased from a new supplier
- There has been a break in production of greater than three (3) years
- The physical location of the production processes has changed.

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014 Para. 14 - Acceptance Test Procedures.

Supplier to submit a copy of their acceptance test procedure thirty (30) days, prior to use, for Kollmorgen QA approval.

- Procedure should include data sheets for recording all results,
- Procedure shall identify all test equipment to be used for acceptance.
- Procedure to include calibration data sheet listing equipment used, calibration date and expiration date.

Once Acceptance Test Procedure has been approved for the part number, the requirement for ATP has been satisfied for future purchases of this part number, unless a revision change is made to the documentation.

Supplier is obligated to notify Kollmorgen of any changes made to the approved ATP.

015 Para. 15 - Mercury Exclusion.

- Each shipment of supplies furnished for this Order shall contain no metallic mercury or mercury compounds. The supplier shall take reasonable steps to be sure that mercury contamination does not occur during the manufacturing process, testing or inspection.

016 Para. 16 - Material Process Control.

- The supplier shall have on file at their facility or at their supplier's facility inspection reports per the applicable specification for the materials shipped under this order.
- This is to certify that all items noted are in conformance with the contract, drawings, specification and other applicable documentation that all process certifications, chemical and physical test reports, are on file at your facility or your supplier's facility and are available for review by Kollmorgen.

017 Para. 17 - Special Process Control.

Special Processes are those that produce part features that require destructive testing to verify conformity.

- Suppliers engaged in special processes (example: soldering, brazing, welding, etching, plating, casting, heat treating) shall have in place procedures to support special processes. Supplier must have approved methods on file supporting acceptance of special processes (example: magnetic particle inspection, dye penetrant inspection, radiographic inspection).
- Test results and process certifications are on file at your facility or your supplier's facility and are available for review by Kollmorgen.
- Supplier shall maintain a control system for all special process sub-tier suppliers ensuring all processes are documented and controlled.
- Supplier shall ensure that all personnel performing such processes as welding, soldering and Non-destructive Evaluation or Testing are certified in accordance with the specifications contained on the drawings and purchase orders. Supplier shall also ensure the associated equipment used is certified as appropriate.

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018 Para. 18 - Serial Numbers.

- Supplier shall assign individual serial numbers to each item shipped under this order.
- Duplication of serial numbers shall not be allowed.
- Serial numbers will be applied in accordance with drawing and/or specification.
- All supplier data shall be identified by serial number.

019 Para. 19 - Lot Control.

- Supplier shall assign a lot control number to each manufactured lot under this order.
- Lot consists of a quantity of items manufactured during an uninterrupted period.

021 Para. 21 - Test Specimen.

- Supplier shall submit with this shipment test specimens specific to the process being performed.
- All specimens, whether weldment pieces, test bars, optical coatings or painted finishes shall be in accordance with procurement specifications, drawings and/or documents referenced in the purchase order.
- Supplier shall submit test data/test reports identifying material and/or requirements.

022 Para. 22 - Limited-Life Items.

- Supplier to identify manufacture/cure date and expiration date on each item in shipment.
- Shelf life must exceed 75% of total shelf life at time of receipt at Kollmorgen.

024 Para. 24 - Non-Destructive Testing Records.

- The referenced specifications shall control the processes, procedures and operator certifications.
- Shall be subject to review and approval by a Kollmorgen QA representative.
- Detailed inspection/test record showing actuals shall accompany each item of order.
- Supplier's QA representative shall review and approve all inspection/test records.
- Supplier's QA representative must sign (with their title) and date all Inspection /test records.

026 Para. 26 - Records of Material Properties

- Supplier shall provide original mill chemical/physical test reports.
- Reports must comply with and identify the material specification listed on the Purchase Order.
- Reports must be reviewed and approved by Supplier's Quality representative.
- All reports must have Quality Rep's signature, title and date of the approval.

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033 Para. 33 - Records of Heat Treatment.

- Supplier to provide oven heat treat charts and data reports.
- Test reports must have a Quality representative's signature, title and date.
- Heat treat must be performed in accordance with procurement specification B/P and/or documents referenced on the Purchase Order.

034 Para. 34 - Electrostatic Discharge (ESD) Protection.

- Supplier shall conduct and maintain an effective ESD protection/control program.
- ESD program at a minimum shall be in accordance with the latest revisions of [MIL-STD-1686](#) and [MIL-HDBK-263](#).
- Supplier shall mark ESD parts/assemblies with ESD symbol and packaging with ESD Caution label IAW [MIL-STD-129](#).
- Packaging shall be made of ESDS protective material.

035 Para. 35 – Certificate Of Conformance.

- A certificate of conformance shall be supplied with each shipment of material supplied against this Purchase Order. The certificate shall certify that the material meets all applicable Kollmorgen specification requirements or military/industrial specification requirements. Certification should contain the following:
 - Kollmorgen part number and revision
 - Kollmorgen Purchase Order number
 - Supplier part number (if applicable)
 - Serial number(s) (if applicable)
 - Supplier's QA rep. approval with typed name, signature, title and date.
- Supplier shall perform inspection, as necessary, to determine the acceptability of all articles under this Order. The applicable material test results, process certifications and inspection records shall be available upon Kollmorgen request.

038 Para. 38 - Casting Inspection.

- Kollmorgen requires approval on NEW patterns, pattern CHANGES and MAJOR pattern REFURBISHMENTS.
- Supplier shall lay out one sample piece (Blued and Scribed) and record actuals on all drawing characteristics.
- Multi-cavity molds shall be identified with each cavity laid out.
- Kollmorgen QA Review & Approval of casting inspection required prior to production.

040 Para. 40 - Solderability Testing.

- Unless governed by a procuring document (JANTX part, DESC, etc.), Solderability of leads and terminations (including wire) shall comply with requirements of [J-STD-002](#), Category 3.
- Leads, pins and terminals of components or parts susceptible to oxidation shall be protected by adequate packaging to minimize oxidation during storage and shipment.

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041 Para. 41 – Certificate Of Conformance from QPL Approved Manufacturer.

Material used for this order must be provided from a supplier on the Government's Published QPL.

- A certificate of conformance from the manufacturer shall be supplied with each shipment of material supplied against this Purchase Order.
- The certificate shall be signed and dated by the responsible manufacturer representative and shall certify that the material meets all applicable specification requirements or military/industrial specification requirements.

042 Para. 42 - MIL-PRF-31032/MIL-PRF-55110 Printed Wiring Boards.

Supplier for Printing Wiring Boards shall be listed on the Qualified Manufacturers List [QML-31032](#) or Qualified Products List [QPL-55110](#) as specified (applicable).

Unless otherwise specified on the drawing:

- Printed Wiring Boards shall be fabricated and tested IAW [MIL-PRF-31032](#).
- Solderability testing shall be in accordance with [J-STD-003](#), Class 3.
- Test coupons are to be delivered with each order.
- Lot acceptance data sheets listing the actual parameters tested in each case shall accompany each shipment.

043 Para. 43 - Quality Assurance Subsafe/Critical Checklist

- This requirement is individualized for each specific part number and will accompany any RFQ & resulting PO(s).

045 Para. 45 - Calibration Test Report.

- Supplier shall provide a calibration test report for each item.
- The report shall contain at a minimum, the Suppliers name, date, NBS test number traceable to standard, environmental conditions during calibration, part number and revision, Kollmorgen P.O. number, serial number and actual data sheets.

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046 Para. 46 – Controlled Manufacturing Process.

- A manufacturing process map (flowchart) must be provided to Kollmorgen, for review and approval, at least thirty (30) days prior to start of initial production.
- The submittal of the flow chart shall be made using the KEO supplier portal - <http://www.eo.kollmorgen.com/suppliers/>
- The process map shall contain sequential procurement, fabrication, processing, sub-contracting, inspection and test steps.
- The submitted process map may require iteration, to capture additional definition of critical process variables.
- Upon approval of supplier's process map, the supplier shall control all manufacturing, processing, testing and inspections as stated in the documented plan.
- Changes to the approved manufacturing process map and/or defined variables, must be immediately communicated to Kollmorgen using the KEO supplier portal.
- Submitted changes to the manufacturing process map may require additional auditing, qualification and/or submittal of a delta F.A.I. to address the critical characteristics affected.
- Supplier process is subject to audit by Kollmorgen Quality Assurance

049 Para. 49 - Traceability for Subsafe Items.

- Supplier shall ensure that all parts are received with Yellow Subsafe tags
- Traceability of unique identification numbers (heat no. or boule no.) must be maintained throughout the manufacturing process
- Supplier shall ensure that these tags remain with the parts throughout the manufacturing process

050 Para. 50 – Certification of Compliance – Bearings.

- All bearings must be of domestic origin and a Certificate of Compliance is required for each item shipped under this order.

051 Para. 51 - Material Traceability Certification

- All material must be heat or boule traceable
- All material must be marked with the heat or boule number referenced on the cert

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052 Para. 52 – Software Release Notes.

The supplier shall provide a document which contains the following:

- A description of the release or change to the software (release notes)
- Validation checksum or equivalent
- Date of release
- Item identification number (part number)
- When software is delivered electronically (i.e. FTP site, etc), the Supplier shall provide email notification to: SoftwareReceipt@EO.Kollmorgen.com

053 Para. 53 – Unique Item Identification (UII).

- Supplier shall assign Unique Item Identifier (UII) to each item shipped under this order.
- If not specified on the drawing, apply UII 2D Matrix IAW [Mil-STD-130](#) by current item identification marking requirements.
- If item identification is not otherwise specified, mark on the exterior of the part in a location that will not affect the performance.
- Supplier shall include the verification report for the Unique Item Identification for each item shipped under this order. Additionally, Supplier shall maintain a copy of the verification report as a quality record

060 Para. 060– Failure Analysis / Corrective Action Report (FRACA).

Prior to proceeding with repair, the supplier shall provide Kollmorgen with a written failure analysis and corrective action report which details:

- Kollmorgen part number, name and revision
- Kollmorgen Purchase Order number
- Supplier part number (if applicable)
- Serial number(s) (if applicable)
- Root Cause(s)
- List of parts required to repair item(s);
- Quoted Cost to complete the repair;
- Specific and contributory causes of failure;
- Corrective action taken to preclude recurrence and effectivity by date or serial number of corrective action;
- Signature and title of Supplier's Quality Representative approving the failure analysis report.

All replaced material shall be identified as Kollmorgen property and controlled until notice of disposition.