This Supplier Quality Manual Has Been Formulated and Approved By the B.W. Elliott Mfg. Co. Executive Management Team

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Supplier Review

Company: ________________________________

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PRINTED COPIES OF THIS MANUAL WILL BE CONSIDERED UNCONTROLLED
1. INTRODUCTION

**Purpose:** The purpose of this manual is to communicate to our suppliers, processes and systems that are to be used in the manufacture, design and development of parts and products supplied to Elliott Manufacturing (EM), an Actuant Company. EM believes that the implementation of this manual will assist our suppliers in the development of their business and manufacturing processes, contributing to mutually enhance future competitiveness and success. The information in this manual among other things, discusses the importance of supplier performance along with establishing a set of tools for our organization to be used throughout our business. Many of these tools are applicable to our suppliers and their development and will be discussed in this manual.

**Responsibilities:** It is the responsibility of the supplier to understand and ensure compliance with this manual and the quality policies, procedures and work instructions of EM. The Supplier Development and Supplier Quality personnel within EM are responsible for maintaining this document and leading supplier quality and development initiatives within the company and with our suppliers. By presenting our expectations, processes and tools to our suppliers, we make it easier for you to do business with us as leveraging opportunities are provided to you through the possibility of selling across our business segments.

2. CODE OF BUSINESS CONDUCT

EM is committed to standards of conduct, which are based on fairness, reasonableness and integrity. These standards must be upheld in all of our relationships with both our suppliers and any others with whom we transact business, so that our practices will be consistent across the company. In order to provide our customers with the best product at the best price, we are committed to securing value in the goods and services that we purchase. Therefore, as a matter of both sound purchasing practice and business integrity, EM makes all purchasing decisions solely on the basis of which suppliers offer us the best value in their goods and services.

Our employees shall avoid accepting any favor, gift or entertainment, which might lead a reasonable person to think that its receipt would influence a purchasing decision. Accordingly, it is our policy not to accept favors, gifts or entertainment from suppliers with the sole exceptions of appropriate and infrequent hospitality or business mementos of nominal monetary value. Any breach of this Code may result in the immediate discontinuation of our relationship with the supplier.

EM’s Supplier Code of Conduct helps us to select business partners who follow workplace standards and business practices that are consistent with our company’s values. These requirements are applied to every supplier of ENS. Suppliers are expected to fully comply with the EM Code of Conduct.

3. SUPPLIER EXPECTATIONS

All suppliers considered critical to EM business objectives are expected to be compliant to a quality system, such as ISO9001, TS16949, or AS9100. Any change in such third party approval/certification status must be communicated to EM in writing. EM will evaluate on a case-by-case basis those suppliers who are not registered to a formal quality system, but who can provide goods and services. Due to BW Elliott supplying material across multiple markets, including government contracts, it is a requirement that all external providers disseminate to their employees (1) the importance of their contribution to our product or service conformity; (2) their contribution to the product safety; and (3) the importance of ethical behavior relative to BW Elliott’s products as defined in AS9100.
4. QUALITY SYSTEM REQUIREMENTS

Quality Planning:
Quality planning is essential to foster continuous improvement, defect prevention and process optimization. It is required during all phases of product and process development. Quality planning is a living system that must be maintained throughout all phases of the product life cycle.

Change in Materials & Manufacturing Processes, >2 Year Gap in Production:
When there is a change in material/component/process to a new or a substitute material/component/process, EM Supply Chain and Quality must be notified and prior approval obtained through a test/validation process. Approval is required prior to production shipments. Change in a secondary/sub-tier supplier (ex: plating/heat treat/secondary machining operation) shall require EM notification. A gap in production of over 2 years shall also require notification to EM and the supplier will provide updated First Article documentation for EM review with the shipment.

The continuous improvement philosophy encourages process improvements. However, prior to any modification to a process being implemented, the supplier must complete all verifications and tests necessary (including preliminary capability studies) to ensure that a new process continues to yield components that meet specification.

Operator and Inspection Instructions:
The supplier will prepare written operator and inspection instructions for employees who have responsibilities for operation of the process and inspection.

Purchased Part Control:
The supplier must maintain qualifications for sub-contractors and the products purchased through them. It is the suppliers’ responsibility to ensure and control the quality of all components and raw materials that are purchased to manufacture components and parts for EM.

Process Capability:
A Statistical Process Control Plan and appropriate SPC data for special part and process characteristics must be kept on file as required by EM. All significant or critical characteristics (unless otherwise specified) shall be controlled with SPC and variable gauging as applicable. The capabilities must be identified in the control plan and adhered to. This data may be required with each shipment at the discretion of the EM receiving facility. Special characteristics will be defined in EM specifications when applicable.

Measuring and Testing Equipment:
Adequate gauges and measuring and testing equipment for process control are mandatory. This equipment is to be provided by the supplier and, where feasible, must be designed to provide variable data. The supplier must establish, implement and maintain a procedure to verify the acceptability of all gauges, tool masters, fixtures and measurement/test systems at specified intervals to ensure the integrity of the systems. The procedure must be documented, updated and essential and must be traceable to national/international standards.
Performance Test Requirements:
Performance testing is conducted to confirm that current production meets design requirements. Testing is to be conducted in accordance with the established control plan. Performance test failures are cause for a supplier to **stop production immediately**, pending analysis of the process and corrective action. Suppliers are required to immediately notify the customer location of test failure, suspend shipments and identify shipped suspect lots.

Material Identification:
The supplier is required to establish a system for the control of all materials.

Drawing and Change Control:
The supplier’s quality system must ensure that the appropriate engineering drawings and specifications are available at the manufacturing, test or inspection location.

Product Verification (New Setup):
New part setups must be checked prior to production runs. Setup instructions must be available to those performing the setup. Product released for production using a new setup must conform to control plan requirements or process steps established.

Rework Procedure:
Rework consists of alterations to a product that are not part of normal production process and which will provide material in full compliance with applicable drawings and specifications. The rework must be done in a timely fashion so as to not interrupt EM production or customer commitments. Purchasing will assist in establishing the timeframe within which reworks are to be done. When rework is required as an interim measure, the supplier is required to provide the following:
1. Written rework instructions as necessary
2. Written rework inspection/test instructions
3. Acceptable standards where applicable

Lot Traceability:
As applicable, the supplier is required to establish a lot traceability system that tracks components from raw material through inspection and test operations, including rework and sub-supplier procedures.

Outgoing Product:
The supplier quality plan must have sufficient controls to ensure that the product to be shipped conforms to the customer’s physical, dimensional and visual requirements.

Procedures:
Suppliers must develop, implement and maintain written procedures for control and continuous improvement of quality for the products and services provided.

Late Shipment Notification:
Suppliers must notify the BWE Supply Chain office when scheduled or previously agreed upon material deliveries are not going to be executed as planned.

Policy for Early Receipts:
The BWE On Time Delivery window is no more than 2 days early and 0 days late to the established PO date.
Records Retention:

The supplier must retain adequate quality system records, including all advanced quality planning documents, proof of inspection and related results, process guidelines, laboratory test instructions, gauge/test equipment verification and calibration and performance test methods for a length of 7 years minimum or per EM PO contract specific requirements or the supplier’s respective Quality System scope, whichever is longer.

Quality Communications:

At EM, we recognize the critical role quality plays in our success. Our realization of this goal is dependent on receiving quality materials from our entire supply chain. Quality is a prime consideration for supplier selection and sourcing at EM. An essential ingredient to a successful partnership is clear and concise communication. At EM, our means of communicating direction, expectations, guidelines and systems include:

- Purchase Orders
- Blue Prints
- Nonconforming Material Reports
- Supplier meetings
- The Supplier Quality Manual
- The Quality Survey
- Performance Report (Supplier score cards)

All documentation must be communicated to EM in English unless otherwise specified by the using facility.

Internal Audits:

A supplier must conduct regular internal audits to ensure continued compliance with internal procedures and customer requirements as part of their quality systems.

5. SHIPPING PACKING REQUIREMENTS

Size: Most applicable to product or designated by print if necessary to avoid breakage or damage to parts. (No Styrofoam packing material) Package size at times was designated by point of use location due to location size and was then coded in system so MRP would calculate the order size based on the coding for optimal ordering and storage capacity.

EM requires that all material shipped be identified on a Packing Slip or Bill of Lading. The following information should be noted on these documents if they apply:

- Shipment Date
- Invoice/Packing Slip or Bill of Lading number
- Sold to address
- Ship to address
- 1 line item for each part number shipped
- FULL part number must be referenced with proper revision levels
- Description of the product
- Purchase Order Number for each part number must be noted on same line as part number and quantity (for multiple Purchase Orders on one Packing Slip)
• Order Release Number (if applicable)
• Quantity Ordered / Quantity Shipped
• Number of containers of each part number shipped with the extended quantity noted. (ex. 10 containers @ 100 pcs. total 1000, if it applies.
• Any hazardous materials notification required by P.O., or regulatory requirements.
• Total number of cartons/skids and weight.

Packing Label outside of boxes should have:
  o Supplier Name,
  o ENS Part#, Revision Level
  o PO#, Qty per Package
  o Lot # if applicable
• Packing Slips to include all above, and also qty being backordered, if applicable.
• COC or any other applicable certs/documents should be on package outside of box or inside the box (for overseas shipments Packing Slip/COC to be placed inside the box and box marked also, in case customs retains paperwork during clearance process).

6. INVOICING REQUIREMENTS

ENS Suppliers must follow these guidelines in order to avoid delays in payment of outstanding invoices:

• Payment terms will apply when we receive a conforming invoice.
• Supplier invoices must reference a valid EM purchase order number
• Supplier payments will be based on pricing as per EM purchase order in effect at time of transfer, for title of goods, if different from invoice price
• Supplier invoices must contain the Supplier’s full name, address, and full remittance address (if different than mailing)
• Suppliers shall provide statements of account on a monthly basis, when specifically notified
• All production part purchases must be shipped to Elliott Mfg. Co., LLC on a packing slip with a purchase order number clearly identified.
• Supplier invoices shall be submitted directly to the following address. Please indicate “Accounts Payable” on the outside of the envelope.

Billing Address
PO Box 3241
Milwaukee, WI 53201-3241
Billing Phone: 262-293-1644
Billing Email: elliottap@actuant.com

7. ELLIOTT MANUFACTURING OWNED TOOLING AND GAUGES

Unless otherwise agreed in writing, all supplies, materials, facilities, tools, jigs, dies, fixtures, patterns and equipment furnished to the Supplier by EM to perform a purchase order, or for which the Supplier has been reimbursed by EM, shall remain the property of EM.
The Supplier shall bear the risk of loss of and damage to such property, normal wear accepted. Such property shall at all times be properly stored and maintained by the Supplier, shall be identified as EM property, shall not be commingled with the property of Supplier or with that of a third person, shall not be moved from Supplier’s premises without EM’s prior written approval, and shall, upon request of Buyer by Seller, be properly packed and marked in accordance with the requirements of the carrier selected by Buyer to transport such property, or shall upon request of Buyer, be immediately delivered to Buyer by Seller at any location designated by Buyer, in which event, Buyer shall pay to Seller the cost of delivery such property to such location. Buyer shall have the right to enter onto Seller’s premises at all reasonable times to inspect such property and Seller’s records with respect thereto. In general, the requirements for Supplier’s use of EM property include:

- Inspection equipment must be specified in the control plan and be traceable to the inspections performed;
- All inspection/test equipment must be included in a comprehensive calibration program, but not limited to selection criteria based on required accuracy and precision certification conducted prior to initial use and at prescribed intervals. Reaction plans must be in place and followed when a piece of inspection/test equipment is deemed out of calibration
- Supplier is responsible for the proper use, maintenance and calibration of all tooling, testing and inspection equipment
- All equipment must be clearly identified, including part number, revision level, calibration date and have a EM identification number
- Whenever a maintenance or repair is needed for EM owned or EM’s customer provided tooling prior authorization from EM must be obtained before any such work can be performed
- Record of maintenance shall be kept by the supplier until such time that the part is no longer considered ‘active’ (part remains “active” until tooling scrap authorization is given in writing or request for return of the tool to EM is made, by EM).
- EM reserves the right to inspect any tooling, testing and/or inspection equipment at the supplier’s location.

**Tooling Payments**

Tooling will be paid for in accordance with the Terms and Conditions of the Tooling Purchase Order after receipt and approval of the Supplier’s PPAP or First Article. Any other payment methods must be negotiated in advance and agreed to in writing. Purchase Orders for tooling will be generated, as well as other documents, and will become part of the legal agreement.

Profit on tooling is not allowable, and the selling price of tooling to EM must equal the supplier’s cost.

**Tooling Capacity Life**

Suppliers are required to submit, with all tooling quotations, expected output capability and tool life expectations.

**Tool Transfer**

Suppliers must obtain prior written approval from the ENS buyer in order to relocate any tooling, which is owned by EM or our customers. This includes internal transfers from one supplier location to another, movement to a supplier’s Sub-Contractor, or movement from the incumbent supplier to an alternate source that has been selected by EM. New PPAP’s or First Articles will be required when this takes place. Failure to comply will expose the supplier to any liabilities associated with tooling defects, and any premiums resulting from line shortages.
RIGHT OF ENTRY
When required, EM or EM customers and related Regulatory Agencies shall be afforded the right to verify at the supplier’s premises that the product or services supplied to EM conform to specified requirements. All documents will be the Supplier’s responsibility to maintain and be available upon request.

PRECEDENCE
If conflicts arise between this Supplier Quality Requirements Manual, EM purchase order and/or engineering drawing/specifications, specifications, or other applicable documents, the Supplier must inform EM of the conflict through the appropriate purchasing contact.

8. OBSOLESCENCE CLAIMS
When a Production Part for which open Purchase Orders exist is discontinued or cancelled, the supplier may have an obsolescence claim based on EM release authorizations. ENS will seek to minimize the cost of the cancellation and will expect the cooperation of the supplier. If this occurs, please contact EM purchasing immediately for direction.

9. BUSINESS CHANGES
Any significant changes in business climate such as acquisitions, divestitures, pending litigation, or any activity that may change the financial viability of the supplier’s organization must be communicated to EM.

10. INTERNATIONAL MATERIAL DATA SYSTEM (IMDS):
In an effort to comply with domestic and foreign restricted/prohibited substance legislation, parts data for every supplied component and assembly is required by OEMs. The data being requested includes material composition, weight, recycled content, and recyclability for each assembly, component, and applicable sub-component. This includes non-dimensional substances such as lubricants, gases, and fluids. EM is required to enter and send this data to our customers via the International Material Data System (IMDS).

In some instances, an AIAG spreadsheet is manually completed and forwarded. In order for EM to meet these numerous OEM IMDS reporting requirements, we are requesting each of our suppliers to submit parts data for all components and or sub-component supplied to us. Reporting shall be performed via IMDS or per specific destination facility guidelines. EM prefers that suppliers utilize the IMDS method of sending parts data as it is probable that this will be the only accepted format in the future. PPAP submissions may require proof of IMDS parts data submission and acceptance prior to approval.

11. SPECIAL PROCESSES SUPPLIERS
All suppliers shall use only Elliott Manufacturing approved special process sub-contractors, unless otherwise specified by contract or drawing/print reference as provided BW Elliott Manufacturing.

Any supplier may request that a sub-contractor be added to an EM facility’s ASL through the appropriate EM supply chain contact, however, such sources may not be used prior to receipt of documented EM Quality approval. Actual costs of approval for a new sub-contractor may be the responsibility of the requestor. For the processes listed below, special process suppliers will be NADCAP accredited as called out by the drawing/print or PO/Contract as needed.
12. FOREIGN OBJECT DEBRIS/DAMAGE (FOD) PREVENTION

Product suppliers must have a FOD program for the purpose of prevention, detection, and removal of foreign objects. The program should meet the following requirements as applicable:

- FOD prevention must be implemented in all areas as applicable and FOD training awareness must be given.
- Parts must be protected from handling damage in all areas; material handling awareness training must be provided to all employees and handling standards documented.

Supplier must document all FOD incidents and perform root cause analysis.

Metrics must be documented if FOD incidents occur.

If critical FOD areas are noted/required, Physical Entry Controls shall be established with entry requirements visually posted outside each area.

Internal auditing of FOD prevention in all critical FOD areas must be conducted and documented.

13. CERTIFICATION OF CONFORMANCE (COC) / MATERIAL CERTIFICATION (COA)

Unless otherwise specified by PO/contract, a supplier must provide adequate certification of conformance for all materials and processes specified on the purchase order or contract, for each shipment. Where available, these may be submitted electronically.

Suppliers are responsible for all PO terms and conformity characteristics per the PO/contract accepted, i.e., for tier 1 (direct) suppliers delivering a product which includes sub-contracted or special processes, all such processes must be indicated on the direct supplier’s Certificate of Conformance.

**Counterfeit Material Control**

BW Elliott uses established practices and processes to maximize the availability of authentic and conforming material. BW Elliott uses sound Incoming Receiving and Inspection methods to review and substantiate material authenticity based on purchase order terms and conditions and certification requirements shown on the contract/purchase order. Overall material certification requirements from BW Elliott to its suppliers shall comply with the criteria provided in Aerospace Standard AS6174.

**General Certificates**

A general Certification of Conformance, signed by the Quality Management Representative or designated company officer, shall be used for all parts and materials, unless otherwise indicated herein. For machined components; if raw material is not provided by EM a copy of the original mill Certificate of Analysis or manufacturer’s material certificate (COA) shall be provided per PO requirements, or when requested by EM to meet customer requirements. The most common raw material commodities used by EM are bar stock in support of the Machine Shop and raw/bulk wire used to support Core winding.
Depending on individual end customer requirements, it is possible that both a COC and COA may be required by EM. The related PO will communicate these needs as required.

**Special Process Certificates**

In addition to the general certification, an additional special process certification is required. This information may be provided on the general certification or in a separate document. It is understood that EM suppliers have their own formatted documentation. The certificate of conformance will contain at a minimum:

- the process(s) performed,
- the specification number where applicable
- revision level,
- purchase order number,
- part number,
- lot size,
- applicable test results
- serial/traceability numbers where applicable to contract.

Raw metallic materials (including forgings and castings) supplied shall include a copy of the original mill certificate or material test report (certification) from a test lab acceptable to EM.

Raw material mill certifications may not be altered or have any markings other than check marks from verification of physical and chemical values and/or indication of inspection acceptance. Stamps may be applied by warehouses/distributors to add incidental information such as the EM purchase order, weight shipped, etc.

- Casting and forging suppliers shall also include the physical or mechanical properties with heat treat batch-lot numbers.
- When required by contract/PO, certification shall show that all materials comply with all Government requirements including country of origin and country where the material is melted.

**Age-Sensitive Material Certificates incl. Hose & Sleeving**

Age Sensitive Material suppliers shall additionally supply the lot number, source construction number (hose/sleeve only), and cure date (for age-sensitive items) within the COC document. For those shelf items with an expiration date or shelf life, the material should have 75% of shelf life remaining when it is shipped to EM.

**DFAR Preference for Domestic Specialty Metals**

Where required by contract or PO, DFAR requirements shall apply. “Specialty Metals” definitions can be found in the DFAR document. Typically it pertains to Ferrous (Steel) and Non-ferrous metals (Titanium, Zirconium, etc.) and alloys, and compositional limits by elements are noted for each category.

**DFAR Specific Requirements**

Any specialty metals incorporated in articles delivered to EM when this Manual is referenced by contract or Purchase Order shall be melted in the United States, its possessions, Puerto Rico or a qualifying country. (Reference DFAR)

- This requirement shall be flowed down to all sub-tier raw material sources.
- Prior EM approval is required if specialty metals not meeting the requirements are planned for use in articles delivered under contract or purchase order to EM Aerospace sites.
- Any and all exceptions to this requirement shall be noted on the Certification of Conformity.
14. NON-CONFORMING MATERIAL NOTIFICATION, CONTAINMENT AND CORRECTIVE ACTION

All materials furnished to EM must conform to contractual requirements/specification and are subject to inspection and approval after delivery. If a nonconformance is discovered which may affect product already shipped the Supplier will notify EM immediately of the discrepancy and disposition. Notification includes: discrepancy part number, serial number, lot number, quantities, and delivery date. If fault is found with the material, we reserve the right to withhold payment. We’ll also reject and/or return at the risk and expense of the supplier, all or any portion(s) of shipment(s), which fail to comply with our requirements/specifications. Further, where sorting of the product is required due to non-conformance and time is critical, we will require the supplier to sort the non-conforming product at our facility, arrange for sorting at a third-party facility, or arrange for EM to sort the product (at the Supplier’s cost).

Non-Conforming Material
If we have to reject material, we will communicate the problem to you at time of incident to discuss action needed. Purchased components found to be nonconforming through either line rejections, testing failures, failed inspection results, EM customer concerns or returns, or obsolete material will generate a NMR (Non-conforming material report).

Any nonconforming material returned by EM must be properly identified and segregated from normal product at Suppliers’ facilities. Upon request, the supplier will be required to sort, rework or replace the components and resolve the problem. If required, a Supplier Corrective Action Report (SCAR) request will be issued requiring a documented corrective action to permanently resolve that particular issue. A SCAR may also be issued if a historical trend toward a particular fail mode is identified at EM.

Supplier Liability
EM may seek to recover from a supplier any costs resulting from a delivery of nonconforming product. This may include:

- In-house sorting. Charges may be incurred for the amount of time or resources to complete this task.
- Administrative costs
- Costs incurred if the reject is discovered in production or beyond
- Charges imposed by our customer, such as warranty claims or costs associated with a recall campaign including charges to and from the final customer.
- Any other non-conformance related cost

An immediate action plan must be developed to prevent further occurrences of this nature and you may be requested to visit EM for corrective actions.

15. SUPPLIER ASSESSMENT AND QUALIFICATION

Each EM facility maintains a supplier selection and sourcing process that adequately evaluates and identifies potential sourcing for EM. Each group must ensure that all EM suppliers are capable of meeting the business unit’s quality, delivery, cost and continuous improvement objectives as a part of their supplier selection process through supplier assessment and qualification activities.

The supplier assessment and qualification process should include the following:

1. Initial supplier profile and data gathering
2. Supplier Screening and data analysis
3. Supplier Assessment
EM’s selection criterion is based on a desire of obtaining long term superior supplier performance. Selection and qualification by one EM facility may be sufficient endorsement for another to use that supplier without re-qualification. However, the facility with consideration of their sourcing requirements and circumstances will determine this.

Initial Supplier Profile
The “Initial Supplier Profile Survey” is used to obtain initial data and information concerning a supplier that will be used throughout the sourcing and assessment process.

Supplier Screening/Data Analysis Process
The Supply Chain Management group will perform the screening process based on some or all of the following considerations:

- Supplier’s current delivery performance based on 100% on-time expectation
- Supplier’s Quality performance
- Product complexity/compatibility with the supplier
- Supplier’s Business system
- Supplier’s financial strength for future growth and investment
- Supplier’s registration to an industry sector quality system. (i.e., ISO, AS, etc.)
- Supplier’s ability to provide inspection, testing and design analysis as required
- Supplier’s support of “state of the art” equipment and processing
- Strategic importance of the product to supplier’s business strategy
- Supplier’s understanding and compliance with the demands of the industry sector requirements
- Supplier’s ability to manage prototype/pre-production activities
- Supplier’s system to manage logistics
- Effective use of continuous improvement and APQP techniques
- Manufacturing processes that are adequately automated/error proofed

Upon completion of initial screening process the group responsible for the approval will meet and review the outcome. This group will make a determination whether the supplier qualification process will continue. Further follow-up and/or corrective actions may be requested of the supplier. If the results are considered acceptable the process continues.

Supplier Assessment
Once the initial screening process is completed and the supplier is identified as a potential supplier to EM, a self and/or on-site assessment based on the impact of the product or process being sourced will be completed. The results of the assessment will be reported and maintained.

On-Site Assessment
An on-site review may be performed to evaluate the supplier’s operating and quality system. These assessments will be performed by EM/Specialty Power Transmission (SPT) personnel capable of determining the supplier’s effectiveness in key functional areas such as procurement, engineering, manufacturing, and quality.
When possible and appropriate these assessments will be performed by cross-functional teams. The purpose of a cross-functional team is to better substantiate the effectiveness of the supplier’s business, manufacturing and quality systems.
Per customer requirements some EM facilities may require on-site supplier quality assessments when:

- A formal customer complaint and/or root cause analysis determines the supplier to be the root of a concern
- A supplier is classified as “high impact” (i.e., when EM or customer is in jeopardy of a line shut down, safety issue, recall situation etc.)
- Future business is to be awarded to a new supplier that is to be classified as "high impact"
- Third party quality system registration such as ISO-9000 or AS-9100 may be recognized in lieu of a periodic on-site assessment if the ENS facility deems it appropriate.

The Supplier Development, VP Purchasing and/or Quality Leader for the EM business unit has the right to waive the on-site assessment. This waiver will not exempt any customer product or process approval. In some instances, customer approval must be obtained by the EM business group, prior to a waiver.

When an assessment is conducted, as a minimum the EM / SPT business group will utilize the Quality System Assessment (QSA).

The following assessment formats may be used to evaluate, document and score a supplier as part of an on-site and/or self-assessment review.

- Quality System Assessment
- Process Audit
- AS-9100 Quality System Assessment (QSA) document
- NADCAP Process Audit, if applicable
- Continuous Improvement Survey (based on Lean manufacturing)
- Quality performance
- Delivery performance
- Technological contribution
- Engineering design and development support
- ISO/AS/QS/TS compliance and/or certification
- Responsiveness

Please note that when required, EM facility may use an audit format that is specified by market and or customer requirements. EM may also, at its option conduct financial assessments/reviews on a periodic basis.

Self-Assessments

The supplier may be asked to complete a self-assessment in lieu of and/or in addition to an on-site review. The supplier will complete the assessment and provide any necessary supporting documents to the EM facility requesting such an assessment.

Assessment Results

In most cases the potential supplier shall receive a formal report of the survey results within 15 days of the assessment. When system deficiencies are identified, a response time will be provided for the supplier to take corresponding corrective actions. Failure to provide a suitable response in a timely manner is cause for disapproval for further consideration. EM/SPT personnel may discontinue the qualification process at any time.
Approvals

Two types of approvals may be granted:
1. Full approval
2. Conditional approval (subject to specific corrective actions which must be completed within 90 days)

Conditional approval status enables EM to contract with a supplier that is pending a site survey and/or corrective action from site survey. Conditional approval cannot exceed 90 days. Prior to such an approval, the supplier may be requested to submit a copy of its quality manual and complete a self-assessment as directed by the EM location initiating the supplier review. Conditional approval will be granted based on acceptance of submitted documents.

Conditional approval may also be granted to a supplier who has been charged with deficiencies during an on-site visit. A corrective action plan must be submitted and approved by EM within 90 days.

Approved Supplier Listing (ASL)

A list of all suppliers and their status as well as a master file of approval documentation will be maintained by all EM facilities. The individual facility maintains an active supplier list in its ERP system. Suppliers that are approved are listed in the active list of the ERP system. For components that are specified by the customer and are pre-qualified by the customer this process may be waived.

16. APPROVING PARTS FOR PRODUCTION

Once business is awarded, the part or component being sourced must be approved for production by the EM facility. The EM facility or business group will approve parts via one of the following:
1. First Article Inspection (FAI)
2. Production Part Approval Process (PPAP)

First Article Inspection (FAI)

FAI requires that all dimensions for a part be checked and verified prior to full production and receipt of part into the EM facility. All dimensions, (except reference dimensions), characteristics, and specifications, as noted on the design record and process control plan, are to be listed on the FAI Report with the actual dimension results recorded. Blanket statements of conformance are not acceptable.

It is the supplier’s responsibility to meet all applicable specifications. If the supplier is unable to meet any of these requirements, the EM plant supplier quality engineer or appropriately designated EM/SPT employee is to be contacted for determination of corrective action. Suppliers may be required to complete a FAI in accordance with a standard such as AS9102.

Production Part Approval Process (PPAP)

When required by the EM facility, the supplier will be asked to obtain production part approval via the PPAP submission process. The production part submission will be based on the Production Part Approval Process Manual (PPAP), available through AIAG (Automotive Industry Action Group). An EM/SPT representative from the Quality Assurance or Purchasing/Supplier Development group will identify the appropriate PPAP submission level for the part or component to be sourced for the EM facility.
The initial production sample must be submitted from production tooling that is checked for requirements on EM drawings, purchase orders, and engineering specifications. The sample is to be run under production conditions.

**Drawing/Specification Review**

A drawing/specification review for new suppliers, or current suppliers offering new products, will be conducted prior to the PPAP. Representatives from Manufacturing Engineering, and/or Product Engineering Department, Quality Assurance, Supply Chain Management will conduct a review of drawing(s) and specification(s) submitted with the quotation by the supplier, with their representative(s). Engineering drawings, specifications, and engineering and quality standards will be reviewed to provide the supplier with a thorough understanding of EM/SPT requirements. During the drawing and specification review, the supplier will evaluate the product characteristics for clarity and understanding, ensuring the final product will be produced to appropriate specifications.

All engineering drawings, specifications, engineering and quality standards necessary for FAI and PPAP requirements are reviewed to provide the supplier with an opportunity to express areas of concern. All issues and concerns should be resolved prior to the Production Part Approval Process.

**Material & Process Approvals**

For products with EM-developed material and process specification and an EM-controlled source / process drawing note, suppliers must procure materials and/or services (e.g., painting, plating, heat-treating) from suppliers pre-approved by the EM/SPT facility or identified on the EM/SPT specifications. If production parts will be produced from more than one cavity, mold, tool, die, or pattern, a complete dimensional evaluation is required on one part from each cavity, mold, etc. The Reaction Plans in the Process Control Plans should include the action plans for inspecting and repairing / replacement tooling, to ensure the consistent capability of the production process tools throughout the life of the product. (e.g., dies, molds, patterns).

**17. PURCHASE ORDER REQUIREMENTS**

Suppliers are advised that only Elliott Mfg. Co., LLC purchasing agents/buyers have the authority to make contractual commitments with suppliers. Suppliers who proceed without a Purchase Order from the authorized purchasing personnel risk non-payment and may further jeopardize their ability to be considered for future business opportunities.

All parts/services acquired by Elliott Mfg. Co., LLC for production purposes will be processed on a Purchase Order. Verbal authorizations are not allowed. Do not proceed until a purchase order is generated. This purchase order will state part numbers, revisions, prices, quantities, and quality and other requirements that govern the purchase and supply of the parts or services.

All quotations from Suppliers must include any additional costs such as delivery, packaging to supply the item or service. With regard to prices, Elliott Mfg. Co., LLC requires that all supplier invoice prices match Elliott Mfg. Co., LLC’s purchase order prices exactly, to ensure timely processing. To achieve this, any price change must be documented by the issuance of a corrected purchase order, which defines what we understand as the agreed price. Invoices that do not match will be returned to the supplier.
18. CORRECTIVE ACTION

All suppliers for EM must establish and maintain documented procedures for implementing a system of closed loop corrective and preventive action with disciplined problem solving methods. This shall be used when a nonconformance to specification or requirements occurs. Any corrective or preventive action taken to eliminate the causes of actual or potential non-conformities shall be appropriate to the magnitude of problems and commensurate with the risks encountered. The supplier shall implement and record any changes to the documented procedures resulting from corrective and preventive action.

When supplier non-conformances are identified within an EM/SPT Business Group, and are determined to be significant in nature a Supplier Corrective Action Request (SCAR) will be initiated and sent to the supplier. Each EM/SPT location will determine when a SCAR will be generated and will provide an appropriate feedback format. If a format is not specified the supplier should default to the standard AIAG CAR format.

Once the corrective action request is made the following steps will be implemented:

The supplier and/or assignee will acknowledge receipt and investigate the system deficiencies and provide a detailed and complete plan to correct using the format and content required by the EM/SPT Business Group. Responses are to include adequate detail and supporting data to assure EM that appropriate system corrective actions have been taken. Responses are to be returned by the date required by the EM/SPT coordinator.

Responses will include:

1. Identifiable contact person: Identify the contact person(s) responsible for this CAR (if other than assignee) and immediately return to the designated ENS coordinator. Depending on the scope of the issue, this may require formation of a cross-functional team.

2. Definition of the problem: A verbatim restatement of the deficiency/condition as documented in the complaint and if necessary restated in terms of the suppliers process, but it may also include enhancements to clarify the problem. The make-up of the team should be reflective of the defined problem.

3. Immediate Containment Action: Action taken immediately upon identification of the potential noncompliance, such as rejection tags, line checks or supplier notification. This section should describe actions taken by the supplier to correct symptoms in the short term. The response should include an evaluation of all affected inventory (i.e., all at risk population, internal or external of parts and/or product); verification of all currently assumed process/product controls and when, where, how, and by whom containment action will be or has been made. Containment actions must be completed within the appropriate time indicated by the EM facility. Any sort/rework charges incurred by Elliott Mfg. Co., LLC at its customer assembly plants and related transportation expenses will be passed on to the suppliers.

4. Identify and Verify Root Cause: The source or origin of the noncompliance, as well as any contributing factors involved. A finding is generally a symptom of a root cause problem. This section records the supplier’s analysis of the finding to determine the root cause of the problem. A root cause is usually found in inadequate procedures, processes, or in noncompliance (whether intentional or accidental) in one or more of these areas. Detailed, in-depth questions should be asked and appropriate analytical tools can be used to confirm and verify results.
5. Implement Root Cause Corrective Action: The remedial corrective action implemented to address the source or root cause of the noncompliance that will preclude recurrence. The response to root causes should, at a minimum, include changes to procedures, processes and/or training. Root cause correction involves long-term prevention and process improvement rather than an immediate fix. Root cause corrective action must be implemented within the time frame agreed to with the EM/SPT facility. The supplier should also verify that the committed corrective action has been implemented and that the root cause corrections have been accomplished.

6. Follow-up and Preventive Action: An audit to ensure that the committed corrective action plan has been found to be effective as implemented in precluding recurrence of the noncompliance. This section addresses monitoring of both symptoms and root cause correction. These monitoring activities should be added to the supplier’s internal audit program.

The supplier will provide periodic corrective action status reports if/as directed by the EM/SPT Quality/Supply chain personnel. Failure to respond to requests as required will result in procedural escalation to the appropriate EM/SPT Supply Chain Manager and or Quality Assurance Manager. Any questions are to be directed to the EM/SPT Quality/Supply chain personnel.

The EM/SPT Quality/Supply chain personnel will review the response for the following considerations:
- Has the problem been correctly described, properly noting, When, What, Where and How?
- Did containment consider inventories at the supplier, in transit, warehouse, and EM/SPT facility?
- Did containment verify current controls are in place and operating?
- Has the EM/SPT been protected against suspect material being shipped?
- Will the corrective action affect any other product?
- Is corrective action appropriately documented?
- Have implementation dates been identified?
- Has material been produced with the corrective solution implemented?
- Was the corrective action effective based on additional shipments?
- Have the actions to prevent recurrence been successful?
- Were controls plans etc, been revised as necessary?

19. SUPPLIER DEVELOPMENT

EM may partner with suppliers in their development activities which allow us to work closely with our suppliers and assist in driving their improvement efforts. Supplier development initiatives with a supplier focus on the following:
1. Improving process control
2. Improving quality systems
3. Improving product quality
4. Improving supplier delivery
5. Reducing costs
6. Reducing lead time
7. Improving productivity
8. Increasing capacity
20. SUPPLIER PERFORMANCE

At the discretion of the Materials Manager, suppliers will be contacted for performance issues. An escalating approach will be used starting with verbal notification of the existing issue followed by written documentation as improvement is pursued. The primary method for written notification would be issuance of a SCAR to the supplier.

21. COST OF POOR QUALITY

All costs incurred by EM that are associated with the failure of a supplier to meet EM’s quality requirements may be charged back to the responsible supplier. Listed below are typical events or examples that can be associated with the cost of poor quality (COPQ) from a supplier:

I. Receiving Process
   - Non-conforming Material Report “NMR” (NMR Administrative Fee)
   - Sorting
   - Rework
   - Line disruption
   - Premium freight
   - Cost of increased inspection
   - Premium product cost paid to support production
   - Late Delivery
   - Misidentified parts
   - Shipping documentation errors

II. In-Process Fallout
   - Downtime
   - Overtime
   - Additional manpower
   - Line changes due to material availability
   - Associated material losses
   - Outside processing required
   - Premium product cost paid to support production
   - Rework-labor, tooling, and fixtures

III. Customer Issues
   - Rework at customer premises, travel, manpower
   - Replacement of material at customer
   - Premium freight
   - Reimbursement of all charges from customer
   - Added inspection, certification of product, etc.
   - Warranty costs
22. Continuous Improvement
All suppliers are expected to pursue continuous improvement initiatives and the deployment of these initiatives is their responsibility. The following aspects should be considered for such improvement activities.
- DPPMs (customer, Internal, supplier)
- PPAPs On Time / Approved (if applicable)
- Internal Audits
- Scrap/Rework
- On Time Delivery
- Cost Reduction

23. Risk Management and Business Continuity Guidelines
EM’s supply chain has become increasingly complex, global, and subject to a variety of risks that could jeopardize continued operations. In this environment, our customers have challenged us to establish Business Continuity Plans within our businesses, operations and supply chain, as these are more important than ever before. Similarly, EM is challenging its suppliers to establish Risk Management and Business Continuity Plans. While it is clear that contingency plans cannot be developed for all potential scenarios, we are asking our suppliers to take basic steps that will facilitate quick reaction in the event of disruptions.

EM expects its suppliers to have a comprehensive crisis management approach to deal with potential disruptions. The approach needs to include plan of action, checklist of activities, communication plans, escalation procedures, and organization with teams, roles, and responsibilities.

EM is asking each supplier to develop, deploy and maintain these business continuity planning requirements.

EM suppliers are expected to periodically monitor the supplier quality manual (SQM) for changes or additions to the risk management and business continuity requirements.

24. Forms and documents
All associated forms and notifications are in the Appendix section of this document.

25. Elliot Manufacturing Supplier Quality Manual
This Supplier Quality Manual (SQM) is available upon request from the purchasing department and/or the quality assurance department. This manual can also be downloaded from our website. It is the suppliers’ responsibility to obtain the most recent revision of the manual.

26. ATTACHMENTS
1. Supplier Corrective Action Request
2. Customer Deviation Request
3. Supplier Deviation Request
4. Initial Supplier Profile
5. Assessment form
6. Supplier Change Request
7. ISIR Standard Form (AS 9102 Form 3)
8. Part Submission Warrant (PSW)
REVISION HISTORY

F – New format and complete revision of existing document / 2-17-2012 Release date

G – Added supplier document retention time in section 4, and added Revision History section, and noted Rev. level in footer of document to be shown in each page/ 5-15-2012


J – Added reference to Counterfeit Material Control Program on Page 13. BW Elliott suppliers shall meet the requirements of AS6174.

K – Expanded Supplier Performance rating section and redefined performance levels. Added Supplier review and sign-off fields. Added requirement for supplier to notify BWE of late shipments and the early receipt policy. Added PPAP template to forms section.

L – Modified supplier performance process. Reviewed and updated in support of BGM 8D CA-350-I


N – AS9100C Recert Audit finding NCR 2016-01. Update Section 4 Pg 9 for Records Retention requirement. Update Section 4 Pg 7 to clarify Supplier Change responsibility for notification to BW Elliott. June 1, 2016

O – Not used

P – Upgraded Section 3 to accommodate AS9100D flow down of Clause 8.4.3 m. Corrected minor typos. Moved conduct compliance statement from Section 3 to Section 2. Updated new Sign-off page with current executive team members. MRW 4/18/19

PRINTED COPIES OF THIS MANUAL WILL BE CONSIDERED UNCONTROLLED
Supplier Corrective Action Request

<table>
<thead>
<tr>
<th>Supplier</th>
<th>Part #</th>
<th>Description</th>
<th>Quantity</th>
<th>Issued by</th>
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<th>Nonconformance/Problem Description</th>
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<th>Date Approved</th>
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<tr>
<th>Response Assigned to</th>
<th>Date Assigned</th>
<th>Response Due Date</th>
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| Root Cause of the Problem | |
|---------------------------| |

| Interim (Temporary) Action Taken | |
|----------------------------------| |

| Permanent Corrective Action | |
|-----------------------------| |

| Permanent Corrective Action Completion Date | |
|---------------------------------------------| |

| Method of Corrective Action Verification | |
|-----------------------------------------| |

Action(s) Taken Verified to be Effective
By: ___________________________ Date: ____________
CUSTOMER DEVIATION REQUEST

Customer Name: Requested By: ___________________________

Address: Title: ___________________________

Date: ___________________________

Customer PO # ___________ Customer Part # _________________

Revision: Lot Size: ___________ Quantity: _________________

Reason for Deviation:

Customer Approval: YES ______ NO ______ Valid Until ______________

CUSTOMER COMMENTS:

Approved by Signature: ___________________________

Title: ___________________________

Date: ___________________________
SUPPLIER DEVIATION REQUEST

Supplier Section

Supplier Name: ________________________________________________________
Supplier Address: ________________________________________________________
__________________________________________________
Elliott/SPT PO#: ___________ ENS Part #: ________________________________
Revision: ___________ Lot #: ___________
Reason for Deviation:

Qty to be Deviated: ________________
Requested By: ___________________________ Date: _______________________
Title: ________________________________

EM/SPT Section

Disposition:

Valid Until: ________________
Customer Approval Required: Yes _____ No _____
Comments/Status:

Date: __________
INITIAL SUPPLIER PROFILE

Please Complete and Return To:

B.W. Elliott Mfg.
Attention: Quality Assurance Manager
Supplier No.
11 Beckwith Ave.
Binghamton NY 13901
Cage Code:

Company Name & Address:

President/Owner/CEO: Fax:
QC Manager: Phone

Customer Service Contact:

1. Types of products/services provided:

2. Facility Size (sq. ft):

3. Hours of operation (Shifts/Days; Days/Weeks):

4. What is the suppliers total production capacity for the commodities under consideration?

5. Registered/Certified to ISO, AS, or other Quality System?

6. Will the Supplier build and maintain stock?
7. Payment Terms:

8. Dunn/Bradstreet List Number:
9. Who are your top 3 Customers?

THIS SECTION TO BE COMPLETED BY ENS

Reviewed By: Title:
Approved: □ YES □ NO
Date:
ASSESSMENT FORM

PLEASE COMPLETE THE APPLICABLE SECTIONS AND RETURN TO:

SELF ☐ ON SITE ☐

BW Elliott Manufacturing
Attention: Quality Assurance Manager
11 Beckwith Ave.
Binghamton NY 13901

Company Name: Fax:
Office Address: Phone:
Plant Address:
Fax:
Phone:

Type of Business
☐ Individual ☐ Partnership ☐ Corporation

Subsidiary of:

Key Personnel:
Name Title Phone/Email

General Information:
Number of Employees:
Number of Quality Assurance Personnel:
Product(s)/Process(es) provided to BW Elliott:

Quality Assurance System:
☐ AS-9100 ☐ ISO-9001 ☐ OTHER Explain:
Sign and date at the end of this form, and attach a copy of your certification.

If not certified to a quality system, do you plan to become registered? ☐ Yes ☐ No
If yes, approximate date:

1. Are your quality policies and procedures clearly defined and YES NO COMMENTS

Revision Level-P
documented?
2. Are inspection and test procedures reviewed to assure they reflect contractual requirements?
3. Are there controls for the following:
   a. Procured Items?
   b. Receiving, In-process and final inspection and tests?
   c. Calibration □ ISO 10012 □ ANSI Z540-1 □ Mil-Std-45662
   d. Documentation and configuration control?
   e. Storage, handling and shipping?
   f. Non-conforming material and corrective action?
   g. Internal process and system audits?
   h. If any of the above are “yes” are there written procedures for them?
4. Does your company review contracts to ascertain your ability to fulfill contractual requirements before accepting the contract?
5. Does your facility have design capability?
6. Is there evidence that your quality procedures are being followed, reviewed, and updated whenever necessary?
7. Have there been any significant changes to your company management, philosophy, or policies and procedures since our last questionnaire or visit?
8. Are controls in effect assuring that applicable drawings, change notices or other specifications are in use during manufacturing and inspection operations?
9. Do you use sub-contractors? If yes, do you have a system for assuring the quality of their products?
10. Do you ever use parts/materials supplied by your customers for production purposes? If yes, do you have a system for verifying the condition, status and handling of the material?
11. Do you have sufficient procedures in place for lot identification, inspection status and traceability?
12. Are special processes (i.e., painting, welding, x-ray, etc.) performed? If yes, are there detailed procedures, is there operator training and is there sufficient process monitoring to assure quality?
13. Do inspection and test records show conformance to specified requirements?
14. Is the status of product identifiable through the use of inspection stamps, marking, labeling, work travelers, etc?
15. Is there a system for the control of non-conforming material? If yes, does the system prevent inadvertent use of said materials?
16. Are materials properly packaged, handled and stored to prevent damage, loss or contamination?
17. Are age controlled items identified as such, routinely inspected and recalled before expiration date?
18. Are quality records maintained for all phases of operations?
19. Are operator and inspection personnel sufficiently trained to perform their duties in accordance with applicable procedures and contractual requirements? ☐ ☐
20. Do you use any form of Statistical Process Control (SPC)? ☐ ☐
21. Do you allow on-site evaluations? ☐ ☐
22. Do you have an MRP system? If yes, what type? ☐ ☐
23. Do you perform First Article Inspections (FAIs) (AS9102) on all items manufactured for the first time? ☐ ☐
   If yes, are delta FAIs performed whenever drawings are revised? ☐ ☐
   Are FAI records on file at your facility for review by Zero Manufacturing Inc. for a minimum of 7 years? ☐ ☐

Comments:

Questionnaire completed by:
Name:
Signature:
Date:

THIS SECTION TO BE COMPLETED BY BW Elliott / SPT

Remarks/Recommendations:

Reviewed By: ☐ YES ☐ NO

Title:

Approved: ☐ YES ☐ NO

Date:
SUPPLIER CHANGE REQUEST

Supplier Section

Name:________________________________________________________

Address:
________________________________________________________

Requested By: ________________________________________ Date: ______

Title: _________________________________________________

CHANGE FOR:
Elliott Part #: ________________________________ Revision: _____
Elliott PO #: __________
Lot #: ____________ Lot Size: __________ Quantity: __________
Reason for Change:

Description of Change:

EM/SPT Purchasing/Quality Contact: ______________________________

EM/SPT Section

Disposition:

Valid Until: __________

Customer Approval Required: Yes _____ No _____

Comments/Status:

Date: __________
# Part Submission Warrant

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<tr>
<th>Part Name</th>
<th>Cust Part Number</th>
<th>Orig Part Number</th>
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<tr>
<th>Safety and/or Government Regulation</th>
<th>Yes</th>
<th>No</th>
<th>Purchase Order No.</th>
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<th>Weight (kg)</th>
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<th>Dated</th>
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</table>

## Organization Manufacturing Information
- Organization Name & Supplier/Vendor Code
- Street Address
- City, Region, Postal Code, Country
- Application

## Customer Submittal Information
- Customer Name/Division
- Buyer/Buyer Code

### MATERIALS REPORTING
- Has customer-required Substances of Concern information been reported? [ ] Yes [ ] No [ ] n/a
- Submitted by IMS or other custom format:

### Are polymeric parts identified with appropriate ISO marking codes?

### REASON FOR SUBMISSION (Check at least one)
- Initial Submission
- Engineering Change(s)
- Tooling: Transfer, Replacement, Refurbishment, or additional
- Correction of Discrepancy
- Tooling Inactive > than 1 year

### REQUESTED SUBMISSION LEVEL (Check one)
- [ ] Level 1 - Warranty only (and for designated appearance items, an Appearance Approval Report) submitted to customer.
- [ ] Level 2 - Warranty with product samples and limited supporting data submitted to customer.
- [ ] Level 3 - Warranty with product samples and complete supporting data submitted to customer.
- [ ] Level 4 - Warranty and other requirements as defined by customer.
- [ ] Level 5 - Warranty with product samples and complete supporting data reviewed at organization’s manufacturing location.

### SUBMISSION RESULTS
- The results for: [ ] dimensional measurements [ ] material and functional tests [ ] appearance criteria [ ] statistical process package
- [ ] Yes [ ] No [ ] n/a (If "NO" - Explanation Required)
- Mold / Cavity / Production Process

### Declaration

I hereby affirm that the samples represented by this warrant are representative of our parts which were made by a process that meets all Production Part Approval Process Manual 4th Edition Requirements. I further affirm that these samples were produced at the production rate of ___ hours. I also certify that documented evidence of each compliance is on file and available for review. I have noted any deviations from the declaration below:

### EXPLANATION/COMMENTS:

---

<table>
<thead>
<tr>
<th>Is each Customer Tool properly tagged and numbered?</th>
<th>Yes</th>
<th>No</th>
<th>n/a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print Name</td>
<td>Phone No.</td>
<td>Fax No.</td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>E-mail</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Part Warrant Disposition
- [ ] Approved [ ] Rejected [ ] Other

<table>
<thead>
<tr>
<th>Customer Signature</th>
<th>Date</th>
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</thead>
</table>

### FOR CUSTOMER USE ONLY (If Applicable)

<table>
<thead>
<tr>
<th>Print Name</th>
<th>Customer Tracking Number (optional)</th>
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</table>