



GLOBAL INNOVATION

SAE AS 9100B

Quality Management System Manual



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QUALITY MANAGEMENT SYSTEM MANUAL

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Section: 2.0	Title: MANAGEMENT APPROVAL	Issue Date: 3/4/10	Revision: B
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2.1 Approval

Name	Signature	Date
Brent Nolan President Chief Operating Officer	<i>Brent Nolan</i>	3/22/10



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2.2 Revisions

Revision	Section	Change
A	All	AS9100
B	4.5,7	Updated paragraph for compliance



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The Company

Global Innovation Corp. (“GIC”) provides unmatched service in the industry exceeding our customer's expectations of quality, value, and responsiveness. GIC

provides a wide range of offerings from single sided boards to metal backed circuit and RF boards built with exotic materials such as Teflon and more. With over 100,000 square feet of state of the art manufacturing space, GIC produces quantities ranging from a single part to thousands without sacrificing quality and delivering on time, every time.

GIC’s technology capabilities include single sided boards, multilayer mother boards, daughter cards and backpanels along with a range of metal backed boards and RF board capabilities as well. Our staff is committed to staying ahead of the technology curve and as such, they are continuously testing, proving and adding new capabilities. GIC will meet our customers’ needs and desires to the best of our abilities without sacrificing quality for expediency.

As GIC continues to grow and move forward, we will not lose sight of what made us the industry leader and the ideals upon which GIC was founded:

- Strong relationships built upon ethics, excellent communication, unrivaled customer service and on-time delivery of quality printed circuit boards, backpanels, metal back and RF products.



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Scope

The content of this manual applies to GIC in accordance with AS9100B and ISO9001:2008

Manufacturing Location: 901 Hensley Lane
Wylie, Texas 75098

The Quality Management System incorporates processes associated with the **Manufacturing of Printed Circuit Boards** for contract manufacturers of OEM customers or OEM customers directly. The manufacturing processes are suitable for prototype, small to medium production volumes for the manufacture of:

- Rigid circuit boards – single, double, multilayer
- Metal-back boards
- RF Antenna boards
- Teflon boards
- Backpanels

The Quality Management System complies with all elements of the SAE AS 9100 International Standard with the following exclusion:

- GIC is a manufacturing company. The company does not design product. GIC does provide input to our customers for improving manufacturability of the products they contract to us to build, therefore, section 7.3, Design and Development, of the SAE AS9100 International Standard is not applicable to GIC and is excluded from this quality management system.

All personnel who manage, perform and verify work that affects quality are responsible for implementing the Quality Management System as documented. Implementation is assessed regularly by way of internal and external audits and management review.



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Vision Statement

GIC will be the leading supplier of printed circuit boards to the commercial and military OEM customers in North America.

Mission Statement

As the leading supplier of printed circuit boards to North America's electronic equipment manufacturers, GIC

- Will be a customer-focused organization utilizing engineering expertise and production capabilities to provide printed circuit systems that meet or exceed our customers' requirements.
- Will be a highly responsive, cost effective supplier with capacity and resources to meet our customers' requirements.
- Will continually improve processes, methods and materials to reduce costs, improve quality and reduce cycle time.
- Will leverage capabilities and resources of strategic alliance partners (resin, chemical suppliers and equipment manufacturers) to develop new business opportunities and market GIC's capabilities.
- Will continually explore other market opportunities taking advantage of existing or modified processes to expand our offerings and service to our customers.
- Will utilize our resources and technical capabilities to the fullest extent in order to protect the health and safety of our employees, our customers, the general public and the environment.
- Will be the preferred place of employment of highly trained and empowered employees.
- Will be a high performance organization that achieves consistent product quality, on-time delivery and strong financial performance.



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Quality Policy

GIC will team with our suppliers to continually strive to meet or exceed our customer expectations for product quality, service, delivery and cost. GIC establishes quality objectives to accomplish this in a profitable, ethical and professional manner. GIC commits to continual improvement of its quality management system through employee awareness and preventive actions.



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Controlled Copy Distribution List

The master electronic copy of this Manual shall be maintained on the GIC network server as a password protected read-only document in accordance with the Quality Management System Procedure 001 – Control of Documents (QMS PRC 001). All other copies, electronic or printed, are uncontrolled copies and are to be used as reference only.

Copies sent to customers, electronic or printed, are uncontrolled copies and not subject to revision updates. A *.pdf version of the Quality Management System Manual shall be used to send to electronic copies to customers and such shall clearly indicate that it is not a controlled copy.



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3.1 Risk

An undesirable situation or circumstance that has both a likelihood of occurring and a potentially negative consequence.

3.2 Special Requirements

Those requirements identified by the customer, or identified by GIC, which have high risk to being achieved, thus requiring their inclusion in the risk management process. Factor used in the determination of special requirements include product or process complexity, past experience and product or process maturity. Examples of special requirements include performance requirements imposed by the customer that are at the limit of manufacturing capability, or requirements determined by the organization that exceeds the technical or process capabilities.

3.3 Critical Items

Those items (e.g., functions, parts, software, characteristics, and processes) having significant effect on the product realization and use of the product: including form, fit, function, producibility, service life, safety, performance, etc.; that require specific actions to ensure they are adequately managed. Examples of critical items include safety critical items, fracture critical items, mission critical items, key characteristics, etc.

3.4 Key Characteristic

An attribute or feature whose variation has a significant effect on product fit form, function, performance, service life or producibility that requires specific actions for the purpose of controlling variation.



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4.1 General Requirements

GIC's quality management system is established, documented, and implemented with provisions made for its maintenance by means of this SAE AS9100 compliant Quality Management System Manual. GIC's quality management system shall also address customer and applicable statutory and regulatory quality management system requirements. The key processes, along with supporting processes, identified in the Quality Management System and their inter-relationships are:

The criteria and methods needed to ensure effective operation and control of these processes are depicted in this Manual and the Quality Management System Procedures (QMS PRC) as well as in the corresponding Department Procedures (as indicated for each department).

The QMS Manual, the QMS Procedures and Department Procedures make reference to applicable resources, monitoring, measurements and analysis, improvement and records of the respective processes.

Through the use of Internal Audits, Corrective Actions and Preventive Actions (QMS PRC 003, QMS PRC 005 and QMS PRC 006 respectively), actions are specified to achieve planned results and provide for continual improvement of the Quality Management System.

Where Global Chooses to out source any process that affects product conformity to requirements, GIC shall ensure control over such process. The type and extent of control to these out sourced process shall be defined in the quality management system.

- Potential Impact of out source processes on GIC's capability to provide product that conforms to the requirements.
- The degree to which the control for the process is shared
- The capability of achieving the necessary control through 7.4



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**4.1 See Quality Management System Flow Chart and System Process Flow
is in the QMS Directory.**

4.2 Documentation Requirements and Configuration Management

4.2.1 General

GIC's Quality Policy is as stated in the INTRODUCTION of this document.

GIC's Quality Objectives are listed in Policy Statement – Quality Objectives.

This document serves as the quality manual required by the SAE AS 9100 International Standard.

All procedures utilized within the Quality Management System, to include those procedures required by SAE AS 9100, are listed the Master List of documents.

All records utilized within the Quality Management System, to include those records required by SAE AS 9100, are listed in the Master List of documents.

GIC shall ensure that personnel have access to, and are aware of, relevant quality management system documentation and changes.



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4.2.2 Quality Manual

Details of and justification for exclusions are as stated in the Introduction of this Document.

All procedures referenced in GIC's Quality Management System Manual are listed in the Master List of documents

Interaction of the processes utilized within the Quality Management System is as depicted under Section 4.0 of this document and further expanded, as necessary, in Department Procedures.

4.2.3 Control of Documents

QMS PRC 001 - Control of Documents, has been established to define the controls needed to:

- Approve documents for adequacy of use,
- Review and update as necessary for required Changes,
- To ensure that changes and the current revision status of documents are identified,
- To ensure that relevant revisions of applicable documents are available at points of use,
- To ensure that documents remain legible and readily identifiable,
- To ensure that documents of external origin are identified and their distribution controlled, and
- To ensure the unintended use of obsolete documents, and to apply suitable identification to them if they are retained for any purpose.

4.2.4 Control of Records

Records are established and maintained to provide objective evidence of the effectiveness of the Quality Management System. The Quality Management system shall define a method for controlling records that are created by and /or retained by suppliers. (See QMS PRC 002)



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QMS PRC 002 - Control of Records has been established to define control needed to:

- Identify the records, maintained in house or created by suppliers
- Provide for the storage and protection of records,
- Specify the retrieval method, and
- Stipulate the retention time and disposition of records, keeping in mind any specified customer requirements and flowing down customer requirement to suppliers.

All records remain legible, readily identifiable and readily retrieval in a timely manner.

Each product has a unique tool number which defines the current revision and process flow that is maintained in the current in Paradigm all pre-existing data is inactive and archived.

Reference: QMS PRC 002 Control of records.



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5.1 Management Commitment

GIC demonstrates its commitment to the development and implementation of the quality management system and continually improving its effectiveness by:

- Communicating to the organization the importance of meeting customer, statutory and regulatory requirements
- Establishing the quality policy
- Ensuring that quality objectives are established
- Conducting management reviews, and ensuring the availability of resources

5.2 Customer Focus

Focus on customer requirements is stated in the Quality Policy and demonstrated by:

- Management's review of the Quality Management System with a focus on continuous improvement
- Determination of customer requirements related to the products contracted, and
- Measurement of customer satisfaction
- Product conformity and on-time delivery performance are measured and appropriate action is taken if planned results are not, or will not be, achieved.

5.3 Quality Policy

The Quality Policy, as stated in the Introduction of this Manual, is reviewed during each of the Quality Management System reviews to determine its continued appropriateness to the organization and to assure that it is communicated and understood by all within the organization.

The Quality Policy is communicated to all employees at the time they are employed or contracted to work at GIC. Record of the employee understanding of the Quality Policy is documented on training charts and/or during personal annual reviews.

The Quality Policy is implemented throughout the organization and is displayed in strategic locations throughout the facilities.



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5.4 Planning

5.4.1 Quality Objectives

Measurable quality objectives are derived from the Policy Statement – Quality Objectives. The goal of each objective, the persons responsible for the reporting of those objectives as well as the schedule for reporting these objectives shall be an element of the Quality Management System review. see 5.5.1 for relative functions and levels.

5.4.2 Quality Management System Planning

Quality Management System planning is conducted to assure the requirements of Section 4.1 of this manual and the Quality Objectives.

When planned changes are made, a review of the Quality Management System will be conducted to ensure its integrity and actions resulting from this review are documented.

5.5 Responsibility, Authority and Communication

5.5.1 Responsibility and Authority

Responsibilities and authority to implement the Quality Management System is outlined in this Manual, the Quality Management System Procedures, and Department Procedures and work instructions.

The Chief Operating Officer is responsible for all aspects of manufacturing, including the quality of product manufactured at GIC and all resources required. Responsibility and authority for the implementation of the Quality Management System is delegated to the Management Representative (defined in 5.5.2).

All employees, upon noticing defective product or processes or other nonconformance, are required to correct and/or stop the product or process and seek a solution with their supervisor or manager.

The Human Resource Manager is the primary contact on employee related regulations.

The Environmental Health and Safety Manager is the primary contact for matters concerning statutory and regulatory requirements. A master list of required certificates is maintained.



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5.5.2 Management Representative

The Director of Quality or designee is Management's Representative who has been delegated the responsibility and authority to:

- Ensure that processes needed for the quality management system are established, implemented and maintained
- Report to top management the performance of the quality management system and need for improvement
- Ensuring the promotion of the awareness of customer requirements through the organization, and the organizational freedom and unrestricted access to top management to resolve quality management issues.
- The appointed Management Representative shall speak for the company on all matters regarding the Quality Management System and shall be responsible to assure the system is maintained to SAE AS 9100 standards.

5.5.3 Internal Communication

Management has assured appropriate communication channels among the staff and employees within the organization by:

- Providing each staff member and other key employees intranet and internet access, including e-mail
- Providing read-only access to the Quality Management System folder on the network drive by hyper-linking all GIC generated documents utilized by the system and those electronic documents provided by customers, regulatory and industry agencies
- The communication of the Quality Objectives and other pertinent information throughout the company
- Management reviews of the Quality Management System and the distribution of those reviews
- The establishment of timely manufacturing planning meetings
- Company wide meetings with all employees.



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5.6 Management Review

5.6.1 General

To ensure the Quality Management System continues in its suitability, adequacy and effectiveness for the organization, Senior Management shall conduct a review of the Quality Management System. The Management Representative shall administer the review which will include a review of the Quality Policy and Quality Objectives. The review shall be held twice in a fiscal year.

5.6.2 Review Input

Considerations for input to the review of the Quality Management System shall include but are not limited to:

- Follow up on action from previous management reviews
- Customer feedback
- Quality Objectives
- Process performance and product conformity
- Results of audits
- Status of preventive and corrective actions
- Changes that could affect the Quality Management System, and
- Recommendations for improvement

5.6.3 Review Output

Output as a result of the Quality Management System review shall include but not be limited to:

- improvement of the effectiveness of the Quality Management System and its processes
- improvement of product related to customer requirements, and
- resource needs.



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Reference:

GIC Quality Policy

Policy Statement – Quality Objectives

Management Review Minutes

Departmental Procedures



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6.1 Provision of Resources

GIC's staff plans and provides, in a timely manner, the resources needed to:

- Implement, maintain and improve the processes of the Quality Management System, and
- Enhance customer satisfaction by meeting their requirements.

6.2 Human Resources

6.2.1 General

Personnel who are assigned responsibilities defined in the Quality Management System are competent on the basis of applicable education, training, skills and experience.

Internal audits are carried out by personnel who are independent of those having direct responsibility for the audited activity.

6.2.2 Competence, Awareness and Training

Training needs and competency levels required for all personnel performing activities affecting quality are addressed in Position Descriptions or in the Department Procedures.

Training will be provided on or off the job, internally or externally, as appropriate. The effectiveness of training and competency levels achieved shall be addressed during the Quality Management System reviews and on an individual basis during yearly performance reviews.

Employees will receive on the job training to the specific process assigned. Testing will be done to establish competency and effectiveness of training. The Director of Quality or designee will be responsible for establishing and performing the testing. Annual evaluation of employee performance will be considered another form of evaluating the effectiveness of training and skill level achieved.

Training records in the form of attendance sheets, certificates of proficiency and/or certificates of completion are retained for all employees.

All employees are encouraged to make suggestion to the process that enhances product quality or process performance. This encouragement is reinforced during company wide meetings and during personal reviews.



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Where required by regulatory or statutory requirements, training occurs on scheduled bases to meet the stated requirements. Otherwise, recurring training and re-assessment of competency occurs as a result of changes in processes, procedures and/or work instructions or when non-conforming product necessitates re-training to existing procedures or work instructions.

6.3 Infrastructure

GIC's management identifies, provides and maintains the facilities it needs to achieve conformity to product requirements. Infrastructure includes:

- Workspace and associated facilities
- Equipment, hardware and software, and
- Supporting services such as accounting, information technology and contract employment

6.4 Work Environment

GIC identifies and manages the human and physical factors (health, safety, work methods, work ethics, work conditions, ergonomics, etc.) of the work environment needed to achieve conformity of product quality.

Reference:

QMS PRC 007 – Training



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7.1 Planning of Product Realization

GIC has developed several planned processes to accommodate customers' specific product needs and is consistent with the requirements of processes within the Quality Management System. These planned processes are documented in GIC's travelers and are generated by Product Engineering for new products and revisions of existing products. Production Control manages the release of travelers for repeat products. Process Engineering and Quality provides input necessary when specific instructions beyond that which is in a given work instruction are required.

Each product has a unique Traveler identified by a tool number. The Traveler defines particular and specific product configuration requirements to include Manufacturing and Quality Inspection points and those documents that support inspection and acceptance criteria

For each process step in a Traveler, a corresponding procedure, work instruction and/or quality specification is reference Given the Quality Objectives outlined by management, resources identified in planning meetings and the planned process (travelers), GIC has identified:

- Quality objectives and requirements of the product
- Necessary processes, associated documents and resources specific to the product
- Necessary resources: personnel, equipment and logistic support
- Required verification, validation, monitoring, inspection and test activities specific to the product and the criteria for acceptance
- records needed to provide evidence that the processes and product meet requirements
- Necessary safety requirements, work instructions and videos
- Recycling or final disposal of product at the end of it's life
- Configuration management appropriate to the product
- Resources to support the use and maintenance of the product.



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7.1.1 Project Management

As Appropriate to GIC and the product, GIC shall plan and manage product realization in a structured and controlled manner to meet the requirements at acceptable risk, within the resource and schedule

7.1.2 Risk Management

GIC has established, implemented and maintains a process for managing risk to the achievements of the applicable requirements that includes as appropriate to GIC and the product. Risk management techniques include: Reference QMS PRC 009

- Assignment of responsibilities for risk management to Engineering
- Defining the risk criteria (likelihood, consequences, and acceptance).
- Identification, assessment and communication of risk throughout the product realization
- Implementation and management of actions to mitigate risk that exceed the defined risk acceptance criteria
- And acceptance of risks remaining after implementation of mitigating actions

7.1.3 Configuration Management

Configuration of a product is defined by the customer's requirements. GIC assigns a unique tool number which defines the configuration of a part number throughout the realization process, Should there be a need to change the revision during a production run that is requested by the customer, the customer is required to send new data and a new PO to reflect the changes. The product then would be issued a new unique tool number to reflect any changes. Audits are not applicable to customer designed product.

7.1.4 Control of Work Transfers



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Where GIC chooses to outsource any process that affects product conformity to requirements, GIC shall ensure control over such process. The type and extent of control to these outsourced processes shall be defined in the Quality Management System.

- Potential impact of outsourced processes on GIC's ability to provide product that conforms to the requirements.
- The degree to which the control for the process is shared
- The ability to achieve the necessary control through 7.4

7.2 Customer Related Processes

7.2.1 Determination of requirements related to product

Before submission of a quotation, and before acceptance of an initial production order, requirements related to the product are determined by Customer Service and Product Engineering, Quality and Purchasing. Such determination shall include:

- Requirements specified by the customer, including the requirement for delivery. GIC does not participate in Post delivery activities.
- Requirements not stated by the customer but necessary for specified or intended use, where known
- Statutory and regulatory requirements related to the product
- Additional requirements determined by the organization such as materials, labor, packaging, consumables and/or tooling



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7.2.2 Review of requirements related to product

Customer Service in conjunction with Product Engineering, Quality and Operations shall review all requirements related to a new product prior to GIC's commitment and ensures that:

- Product requirements are defined
- Contract or order requirements differing from those previously expressed are resolved
- GIC has the ability to meet the defined requirements
- Special requirements of the product are determined
- Risks have been identified such as short time delivery or new technology

Records of the results and actions arising from review are maintained.

Where the customer provides no documented requirements, the customer requirements are confirmed prior to acceptance by GIC.

Where product requirements are changed ,GIC ensures that all relevant documents are amended and that relevant personnel are made aware of the changes.

7.2.3 Customer Communication

All customer communications should be routed through Customer Service. Product Engineering is responsible for responding to requests for information about the company's products and capabilities. Customer Service shall respond to all requests for quotation.

Customer Service, Product Engineering and Quality shall determine and implement effective processes for communicating with customers in relation to:

- Product information
- Inquiries, contracts, contract amendments and order handling
- Customer feedback and customer complaints

Customer Service shall implement a customer complaint procedure. Such procedure shall include criteria for registering and taking action on a complaint. Action may include the generation of an Internal Corrective Action.



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7.3 Design and Development

- Not applicable to GIC

7.4 Purchasing

7.4.1 Purchasing Process

Suppliers of products, materials and services, where unspecified by a customer contract, are selected on their ability to meet GIC's requirements given due consideration to the quality, statutory obligations, lead times and cost.

GIC shall be responsible for the conformity of all products purchased from suppliers, including product from sources define by the customer.

GIC defines the necessary actions to take when dealing with suppliers that do not meet requirements Reference QMS PRC 005.

A list of approved suppliers and sub-contractors is maintained and periodically reviewed for supplier performance Reference PUR PRC 001.

The Technical Review Board has the responsibility and authority to approve and disqualify suppliers based on performance. TRB shall determine and manage the risk when selecting and using suppliers.

Purchasing requirements are specified by the following:

- Historical performance in supplying similar specifications and requirements
- Lead-time capability
- Recommendations of other manufacturers
- Trials and evaluation of performance
- On-time delivery
- Quality

7.4.2 Purchasing Information

Purchase orders shall describe the product being purchased, including:

- Requirements for approval of product, procedures, processes and equipment



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- Requirements for qualification of personnel
- Identification and revision status of specification, drawings, process requirements, inspection/verification instructions relevant technical data if applicable.
- Requirements for design, test, inspection, verification, use of statistical techniques for product acceptance, and related instructions for acceptance by the GIC and as applicable critical items.
- Requirements regarding the need for suppliers to notify GIC of non-conforming product, suppliers must obtain GIC approval for non-conforming product disposition.
- Flow down of customer requirements
- Record retention requirements and right of access by GIC, their customer and regulatory authorities to the applicable area of all facilities, at any level of the supply chain, involved in the order.
- Quality management system requirements

Purchasing shall ensure the adequacy of specified purchase requirements prior to issuing the order.

7.4.3 Verification of Purchased Product

All purchased product that will be sold to a customer is inspected prior to use.

Quality shall create work instruction for the purpose of performing incoming inspection of raw product. Provisions and criteria for items that may be received as “dock-to-stock” without an incoming inspection being performed shall be included in this instruction.

Where GIC or its customer intends to perform verification at the supplier’s premises, GIC shall state the intended verification arrangements and method of release in the purchasing information.

Purchased product is held until it has been verified as conforming to specified requirements.

Where GIC does not delegate verification activities to the supplier, the requirements for delegation shall be defined, and a register of delegations maintained.

7.5 Product and Service Provisions

7.5.1 Control of production and service provision

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GIC uses travelers and work instructions to control production. Conditions for the control of production include the following:

- Information concerning the characteristics of the product listed on the traveler or in work instructions (appendix)
- Work instructions meeting product quality requirements, are written for each process and/or major piece of equipment.
- Listing of all suitable and necessary equipment on the traveler or in the work instructions
- Work instructions and travelers that include the necessary monitoring and measuring devices, the parameters required by the process and how those parameters are monitored.
- Work instructions shall include reference to the release of the product for the next process including delivery. Such release may be a signature, initials or stamp from an individual trained to those work instructions signifying all work has been completed. Prior to work being initiated in a subsequent process, verification is made to assure all previous work has been completed.
- Monitoring and control of supplies, water, compressed air, electricity and chemical product that can affect conformity to product requirements.
- GIC QMS has implemented QMS PRC 010 FOD sensitive procedures in areas defined as FOD.
- Criteria for workmanship are defined in work instructions, travelers, customer specifications, and applicable standards that are flowed down to production.
- GIC has established, implemented, and maintained appropriate processes to manage critical product including process control where key characteristics have been identified.
- GIC has also identified in-process inspection/verification points when adequate verification of conformance performed at later stages in the realization process.
- GIC accountability for all production, during the manufacturing process shall be defined as parts where applicable.

7.5.1.1 Production Process Verification

- GIC uses a representative PCB, of the first production run of a new part as an (FAI) to



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verify that the production process, production documentation, and tooling used is capable of producing parts that meet requirements. This process shall be repeated when changes occur that invalidate the original results (such as engineering changes, manufacturing process changes or tooling changes)

7.5.1.2 Control of Production Process Change

- GIC controls all document changes affecting processes, production equipment, tools or software. Reference PE PRC 001 for detailed instruction and approval requirements.
- Process changes shall be validated to determine the desired effect has been achieved without adverse effects to product conformity. Reference

7.5.1.3 Control of Production Equipment, Tools and Software Programs

- Production equipment, tools and software used to automate and control or monitor product realization process, are validated prior to release for production and maintained.
- Storage requirements, including periodic preservation and condition checks, are defined for production equipment or tooling in storage.

7.5.1.4 Post Delivery support

GIC performs the following collection and analysis of data on returned product

- Action to be taken reference QMS PRC 005, including investigating and reporting when problems are detected after delivery
- Approval control and use of repair
- Controls required for off site work undertaken at the customer facilities

7.5.2 Validation of processes for production and service provision

When processes have been identified that the resulting output cannot be verified by subsequent monitoring or measurement, Process Engineering and Quality shall validate the process and demonstrate the ability of the process to achieve planned results.

Process Engineering shall establish work instructions for such processes. Consideration in the work instructions should include:

- Defined criteria for review and approval of the processes
- Approval of equipment and qualification of personnel



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- Use of specific methods and procedures
- Requirements for records
- Revalidation.

Manufacturing shall be responsible for maintaining the process in accordance with the information on the traveler, procedures and work instructions.

7.5.3 Identification and Traceability

Product is identified throughout production through the use of travelers identified with a unique tool number and date code kept on file for the minimum of 3 years unless otherwise specified by customer contract.

The product status, with respect to monitoring and measurement results shall be documented and maintained through the use of the travelers, logs, forms and tags.

Where appropriate or required by contract, GIC shall establish suitable means by which to identify product throughout product realization including delivery.

Where acceptance authority is used, GIC maintains on file, associated stamps to establish appropriate controls for the media.

GIC has the ability to trace all products manufactured from the same manufacturing batch to delivery or scrap.

GIC maintains the ability to retrieve production records in a timely manner.

7.5.4 Customer Property

Purchasing shall develop a procedure for the handling of customer supplied product.

Process Engineering shall develop a procedure for the handling of customer supplied tooling and equipment

Product Engineering shall develop a procedure for the handling of intellectual property as it relates to new product (specifications, drawings, propriety information, etc.).

Quality shall develop a procedure for the handling of customer supplied measurement devices and intellectual property as it relates to recurring product (specifications, drawings, propriety information, etc.).



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Procedures for the handling of customer supplied tooling, equipment, measurement devices and intellectual property shall include;

- Identity of the tooling, equipment, measurement device or intellectual property
- Verification
- Protection and safeguard of the property
- The method for reporting to the customer if the property is lost damaged or otherwise found unsuitable for use.

7.5.5 Preservation of Product

Travelers are used to identify all products and the status of recurring product throughout production.

Work instructions shall address the handling, marking and labeling including safety warnings, cleaning, prevention, detection and removal of foreign objects, shelf life control and stock rotation and special handling for hazardous material.

Shipping department procedures or work instructions address the packaging, storage, delivery and protection of product.

7.6 Control of Monitoring and Measuring Devices

Process Engineering is responsible for determining monitoring and measurement to be completed as well as the monitoring and measurement devices needed to provide evidence of conformity of the product to the requirements for new products and/or processes and changes to existing products and/or processes. Quality shall ensure that the monitoring and measurement devices are capable.

Work instructions and/or travelers shall list the monitoring and measurement devices to be utilized.

Quality is responsible the scheduling the calibration of all devices. All calibrations shall be due on or before the last day of the month the calibration expires. Tools are identified by a unique control number and specified by location. GIC shall:

- Identify all monitoring and measurement devices
- Establish frequency of calibration
- Maintain status on calibration of monitoring and measurement devices



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- Calibrate new devices prior to use
- Protect equipment during handling, maintenance and storage
- Ensure suitable conditions for calibration
- Maintain a suitable recall system
- Record of the validity of the previous measurement when the equipment is found not to conform to requirements and the action to be taken on the equipment and any product affected.
- Establish where and how long calibration certificates are maintained.



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8.1 General

GIC, through the determination of applicable methods and statistical techniques and the extent of their use, plans, monitors, measures and analyzes processes to:

- Demonstrate conformity of the product
- Ensure conformity of the quality management system, and
- Continually improve the effectiveness of the quality management system.

8.2 Monitoring and Measurement

8.2.1 Customer Satisfaction

Customer Service shall determine the customer's perception as to whether GIC has met their requirements. Customer Service shall develop and implement plans for customer satisfaction improvements, assess the effectiveness of the results and address deficiencies identified by evaluations. Such determination may include:

- Customer surveys
- On-time delivery
- Customer complaints
- Corrective action request
- Repeat orders
- Customer retention
- Returning customers
- Customer score cards

The assessment of customer satisfaction shall occur annually.



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8.2.2 Internal Audit

All functions within the Quality Management System shall be internally audited to ensure its;

- Conformance to the planned requirements, the requirements of SAE AS 9100 International Standard and to the system itself, and
- Effectively implemented and maintained.

The Quality Assurance Manager is responsible for conducting internal audits of the Quality Management System and the procedure for internal audits. Such procedure shall take into account the importance of the processes and areas to be audited as well the results of previous audits.

The audit criteria, scope, frequency and methods will be defined in the Internal Audit Procedure. Selection of auditors shall ensure objectivity and impartiality of the audit process. Auditors shall not audit their own work.

QMS PRC 003 – Internal Audit shall ensure that actions are taken without undue delay to eliminate detected nonconformities and their causes. It shall include a provision for verification of the actions taken and the reporting of verification results.

Reference:

QMS PRC 003 Internal Audit
CUS PRC 003 Customer Complaints



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8.2.3 Monitoring and Measurement of Processes

GIC shall apply suitable methods for monitoring and measurement of the quality management system processes. These methods shall demonstrate the ability of the processes to achieve planned results. When planned results are not achieved, correction and corrective action shall be taken in accordance QMS PRC 005 Corrective Action, to ensure conformity of the product.

Internal audits as described in the QMS PRC 003 – Internal Audit shall be used to monitor and measure the quality management system processes so as to demonstrate the ability of the processes to achieve planned results.

Reference:

QMS PRC 003 Internal Audit
QMS PRC 005 Corrective Action

8.2.4 Monitoring and Measurement of Product

The characteristics of the product shall be monitored and measured to verify that the requirements have been met. This shall be carried out at the appropriate stages of the production realization process in accordance with the planned parameters.

Evidence of conformity with the acceptance criteria shall be maintained to provide evidence that the product meets the defined requirements. Travelers shall indicate the person(s) authorizing release of product.

Product release shall not proceed until the planned processes have been satisfactorily completed, unless otherwise approved by a relevant authority and by the customer. GIC ensures that all documentation required to accompany the product are present at delivery.

When the realization process has accessed critical processes, including the key characteristic controls, they are to be monitor in accordance with the established processes.

When appropriate GIC uses a C=0 product acceptance sampling plan justified on the basis of criticality of the product and to the process capability.



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Where product is released to the manufacturing floor without completion and monitoring activities, it is identified as suspect through the manufacturing process for the intent of evaluation or replacement if found to be non-conforming.

Measurement requirements for product acceptance shall be documented and include the following:

- Criteria for acceptance and/or rejection specified on the traveler, master drawing, work instructions, standards, and customer supplied data.
- The sequence measurements and testing occurs specified during the realization planning process.
- Required records of the measurement results, as a minimum indication of acceptance or rejection, and any specific measurement instruments required and any specific instructions associated with their use specified on traveler and/or work instructions. Inconsistent with customer supplied requirements.



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8.3 Control of nonconforming product

Non-conforming product is defined as parts or materials that do not meet documented specifications, purchasing requirements, or workmanship standards. Non-conforming material shall be identified and segregated in order to prevent its unintended use or delivery. Non-Conforming Material Form Report is used to identify nonconforming material.

QMS PRC 004 – Non-conforming Material has been written to provide a procedure for the control of non-conforming product. This procedure addresses the responsibility and authority for dealing with nonconforming product and:

- Action(s) required to eliminate the detected nonconformity and to include re-verification to demonstrate conformity to the requirements
- Use, release or acceptance under concession by a relevant authority and, where applicable, by the customer
- Action required precluding its original intended use or application.
- Actions necessary to contain the effect of non-conformity on other processes or products

Records of nonconformities, subsequent actions taken, and concessions granted shall be maintained. Disposition of use-as-is or repairs shall not be used unless specifically authorized by the customer if the nonconformity results deviate from contract requirements.

Product disposition for scrap shall be conspicuously and permanently labeled and positively controlled until physically rendered unusable. These records shall be identified in the QMS PRC 004 - Nonconforming Material.

The procedure for the control of non-conforming material, shall address the action taken when product nonconformance is detected after delivery and in a timely manner.

Reference:

QMS PRC 004 Nonconforming Material



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8.4 Analysis of Data

GIC shall determine relevant data to be collected and analyzed to demonstrate the suitability and effectiveness of the quality management system and to evaluate where continual improvement of the effectiveness of the quality management system can be made.

Analysis includes data generated as a result of monitoring and measurement and information relating to:

- Customer satisfaction
- Conformity to product requirements
- Characteristics and trends of processes and products including opportunities for preventive action, and
- Suppliers.

8.5 Improvement

8.5.1 Continual Improvement

GIC shall continually improve the effectiveness and evaluate the results in the Quality Management System through the use of the Quality Policy, quality objectives, audit results, analysis of data, corrective/preventive actions and management reviews.



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8.5.2 Corrective Action

GIC shall take appropriate action to eliminate the cause of nonconformities in order to prevent recurrence. As described in QMS PRC 005 - Corrective Action Procedure, GIC shall:

- Determine the cause of the nonconformities
- Evaluate the need to implement containment action
- Determine and implement the action needed
- Record the results of action taken
- Review the effectiveness of the corrective action taken.
- Analyze the overall trends of nonconformities for action towards continual improvement
- Flow down corrective action requirements to a supplier when it is determined that the supplier is responsible for the nonconformity.
- Determine if additional nonconforming product exist based on the causes of the non-conformities and taking further action when required.

Reference:

QMS PRC 005 - Corrective Action



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8.5.3 Preventive Action

Where appropriate, GIC takes preventive action as depicted QMS PRC 006 - Preventive Action. This procedure shall:

- Define the requirements for determining potential nonconformities and their causes
- Evaluate the need for action to prevent occurrence of nonconformities
- Determine the action needed to prevent occurrence of nonconformities
- Identify records for the recording of results of preventive action taken
- Establish a review of preventive action taken.

Reference:

QMS PRC 006 - Preventive Action