



589 South Main Street
Churubusco, Indiana 46723

QUALITY MANAGEMENT SYSTEM

POLICY MANUAL

Based on:
ISO 9001:2008 AND ISO/TS 16949:2009

Authorized By:

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Director of Quality

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Section 1.0 Introduction and Scope

1.1 General

BRC Rubber & Plastics, Inc. (hereafter referred to as BRC) has a long history of manufacturing quality components primarily for the automotive industry. Activities at BRC Rubber & Plastics, Inc. include the design, production, assembly, inspection and testing of rubber products including rubber-to-metal and rubber-to-plastic.

ISO 9001:2008 specifies requirements for a quality management system. BRC has demonstrated its ability to consistently provide product that meets customer and applicable regulatory requirements. BRC enhances customer satisfaction through the effective application of the system, including processes for continual improvement of the system and the assurance of conformity to customer and applicable regulatory requirements.

Statutory and regulatory requirements are a concern as it relates to product and included various factors that influence the design and implementation of the QMS.

The process approach needs to take into account the desired outcomes (i.e. objectives) of a process.

Emphasis has been given that ISO 14001:2004 is compatible to ISO 9000:2008 and ISO/TS 16949:2009 requirements.

TS 16949:2009, in conjunction with [ISO 9001:2008](#) defines the quality management system requirements for the design and development, production and, when relevant, installation and service of automotive-related products.

For BRC, TS 16949:2009 is applicable to the Bluffton, Churubusco, Hartford City and Montpelier locations. The [Sales](#) location is listed as a support site to the manufacturing locations.

BRC is located at the following locations:

Bluffton Division
810 West Lancaster Street
P. O. Box 255
Bluffton, IN 46714
Phone 260/824-4501
Fax 260/824-5487

Churubusco Division (Corporate)
589 South Main Street
P. O. Box 227
Churubusco, IN 46723
Phone 260/693-2171
Fax 260/693-6511

Hartford City Division
1133 Gilkey Avenue
P.O Box 611
Hartford City, IN 47348
Phone 765/348-4800
Fax 765/348-4811

Ligonier Division
One Wall Street
P. O. Box 71
Ligonier, IN 46767
260/894-4121
Fax 260/894-7263

Montpelier Division
623 West Monroe Street
P. O. Box 145
Montpelier, IN 47359
Phone 765/728-8510
Fax 765/728-8513

Detroit [Sales](#) Office
1091 Center Road
Suite 220
Auburn Hills MI 48326
Phone 248/745-9200
Fax 248-745-8857

General questions about ISO 9001:2008 or ISO/TS16949:2009 certification and the quality management system should be directed to Director of Quality at the Churubusco office.

ISO 9001:2008 apply to the Ligonier Division.

ISO/TS 16949:2009 apply to the Bluffton, Churubusco, Hartford City and Montpelier Divisions with Auburn Hills as a support site.

1.2 ISO/TS 16949:2009 Exclusions

The Quality Management System is modeled after the ISO 9001:2008 standard and ISO/TS 16949:2009 specification. There are no exclusions that apply to the BRC. There are no black-box designs at BRC.

1.3 Quality Management System Policy Manual

The policy manual represents a general description of the BRC quality management system. The manual is based upon the requirements of ISO 9001:2008, ISO/TS 16949:2009, and where applicable, customer specified requirements. It replaces the quality manual that was based upon the QS-9000:1998 and ISO 9001:1994 standards. The structure of the manual follows the ISO/TS 16949:2009 quality management system model. It defines BRC policies and commitment to quality responsibility in all facets of the organization.

Throughout the quality management system manual there are references made to supporting procedures. These documented procedures define in greater detail how, when and by whom the BRC policies are carried out. The procedures also identify records that are created and maintained.

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Controlled copies of this manual are maintained and accessible to all employees of the company. Distribution of controlled copies is the responsibility of the [Director of Quality](#). Copies of this manual are identified as controlled when the title page contains the signature of the [Director of Quality](#) and the revision level in the Table of Contents matches the master copy. The Master Copy of this document is electronically stored and is posted on the server, which is backed up regularly. When changes to this manual are made, new versions of controlled copies are printed and released to designated points of use. Obsolete portions of the manual will be removed from service and discarded. Appropriate personnel are made aware of the changes. The document history is recorded in section 12.0 of this document.

The BRC Policy Manual is for all BRC locations. The bold areas are for ISO 9001:2008 requirements and apply to the BRC Ligonier Division. The entire Policy Manual applies to BRC Bluffton, BRC Churubusco, BRC Hartford City and BRC Montpelier Divisions.

2.0 Organizational Structure and Key Processes

2.1 Organizational Structure

BRC Rubber & Plastics, Inc. plant management reports to a corporate management team that oversees the activities of the organization and allocates the resources of its divisions.

As a customer-focused organization, BRC takes its direction from the marketplace. The BRC Plant Manager represents the interests of the organization and its owners in satisfying the needs of the customers. The Quality Manager serves as the Management Representative for each BRC location and is the primary point of contact for communication regarding the system within each division. The Plant Manager will delegate to the appropriate managers the specific responsibilities and authorities for managing the various functions of the system. The [Director of Quality](#) is the Management Representative for BRC.

2.2 Key Processes

The BRC quality management system is designed to provide for the efficient movement of material and information from one function to another in order to achieve desired results. Process flow diagrams show the typical flow and the interrelationships of the various functions of the organization.

Product realization is supported by additional functions that provide system infrastructure.

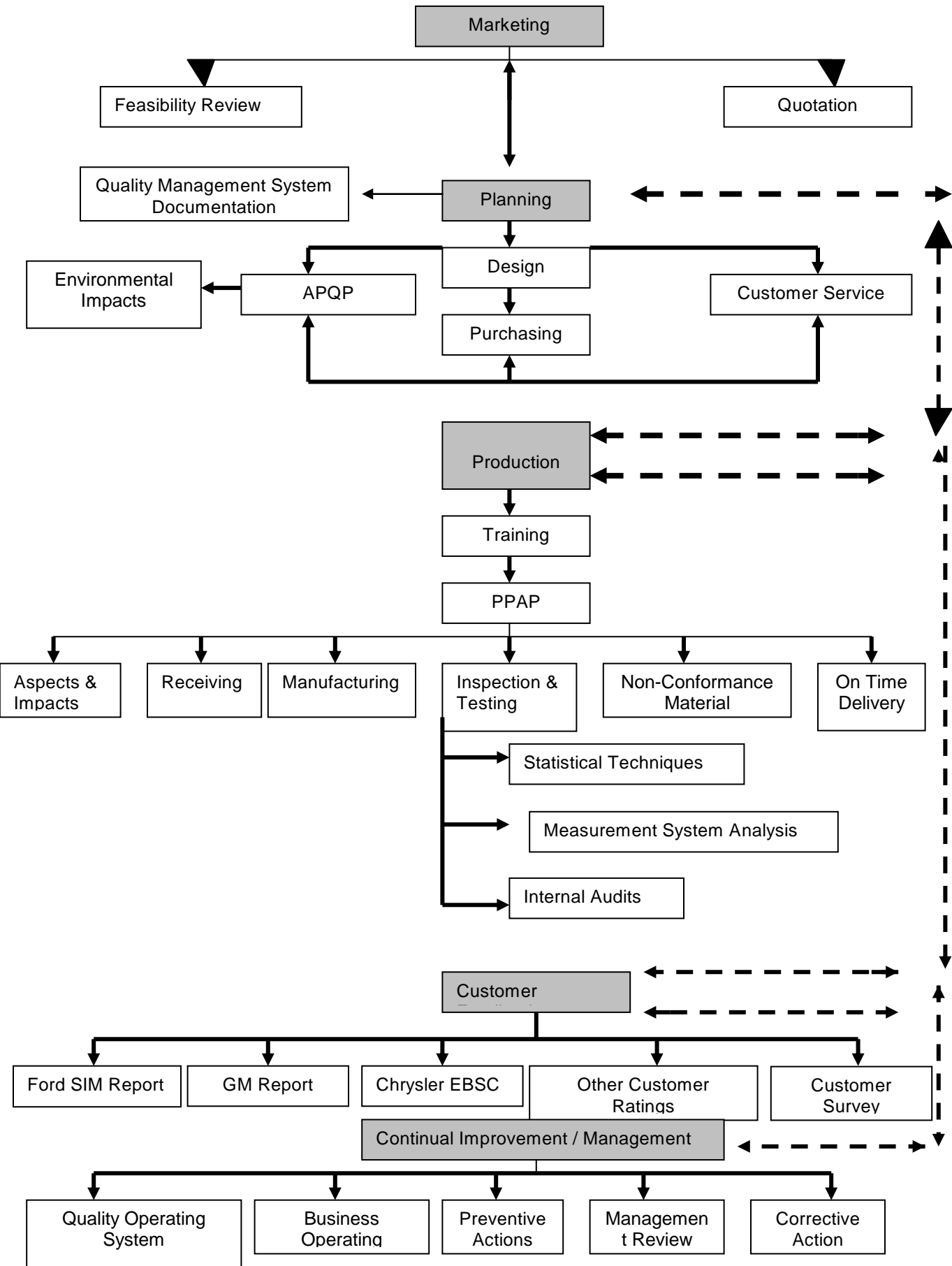
BRC has identified five (5) key processes. With each key process are support processes. They are:

- Marketing (quotation, feasibility)
- Planning (design, APQP, purchasing, customer service)
- Production (PPAP, training, receiving, manufacturing, packaging/shipping, inspection and testing, statistical techniques, measurement system analysis, internal quality audits, non-conforming material, on-time delivery)

- Customer feedback (customer ratings, customer surveys)
- Continual improvement (Quality Operating System, Business Operating System, preventive actions, management reviews, corrective actions,)

The following page is a flow diagram of BRC's key process with support processes:

BRC Rubber & Plastic PROCESS MAP



3.0 Quality Policy and Objectives

3.1 Quality Policy and Objectives

The following Quality Policy statement is the focal point of the BRC quality management system:

“ BRC Rubber & Plastics, Inc. is dedicated to Customer Satisfaction by providing Quality Products in a Timely Manner through Teamwork and a Commitment to Continual Improvement.”

This statement reflects BRC’s commitment to serving the needs of its customers. The policies contained in this manual serve to instruct and guide associates whose actions affect product quality and to inform the organization’s customers of the controls that are implemented to assure product quality.

In support of this policy, each associate is empowered to take action necessary to ensure that customer requirements are met. This may include stopping production until quality issues are resolved. It is also the responsibility of each associate to adhere to the requirements of this quality management system and, when possible, suggest improvements.

To confirm the effectiveness of the quality management system, BRC Rubber & Plastics, Inc. has developed the following quality objectives. Specific targets will be defined, documented and communicated by management. By monitoring the company’s performance toward attaining these targets, management can determine the effectiveness of this quality management system.

BRC quality management system objectives for quality are to:

...strive to be the supplier of choice for BRC customers.

(External PPM, customer quality concerns, on-time PPAP, first time PPAP approval, customer surveys, internal and external quality audits)

...establish zero defects as the goal of production.

(Internal PPM, scrap as a percentage of production)

...meet customer expectations for on-time delivery.

(Ford SIM, GM Report, Chrysler EBSC, premium freight)

...avoid waste and excessive cost without jeopardizing quality.

(WOW, Cost-Of-Poor-Quality)

...provide a safe environment for employees.

(Reduction of turnover, elimination of accidents)

For BRC Montpelier, the objectives are:

- fewer customer quality concerns
- pass internal and external audits
- lower scrap dollars as a percent of transfer
- lower cost of poor quality
- reduction of turnover

- elimination of accidents

Section 4.0 Quality Management System

4.1 General Requirements

BRC Rubber & Plastics, Inc. has established, documented, implemented and maintained a quality management system and continually improves its effectiveness in accordance with the requirements of ISO 9001:2008 or ISO/TS 16949:2009.

BRC has:

- **determined the processes needed for the quality management system and their application throughout the organization**
- **determined the sequence and interaction of these processes**
- **determined criteria and methods needed to ensure that both the operation and control of these processes are effective**
- **ensured the availability of resources and information necessary to support the operation and monitoring of these processes**
- **monitored, measured and analyzed, where applicable, these processes and**
- **implemented actions necessary to achieve planned results and continual improvement of these processes**

The control over outsourced processes **does not have to be identified but the type and extent of controls must be in the QMS. The outsourced processes do not absolve BRC of the responsibility of conformity to all customer requirements.**

4.2 Documentation Requirements

The quality management system includes:

- **documented statements of the quality policy and quality objectives**
- **the BRC quality manual**
- **documented procedures required by ISO 9001:2008 or ISO/TS 16949:2009**
- **documents needed by BRC to ensure the effective planning, operation and control of its processes**
- **records required by ISO 9001:2008 or ISO/TS 16949:2009**

BRC has established and maintained a quality manual that includes:

- **The scope of the quality management system**
- **The documented procedures established for the quality management system.**
- **The description of the interaction between the processes of the quality management system.**

Documents and records required by the quality management system are controlled. Records are controlled according to the requirements. BRC may require records be created and maintained that are not required in ISO/TS 16949:2009. A documented procedure has been established to define the controls needed:

- **to approve documents for adequacy prior to issue**
- **to review and update as necessary and re-approve documents**
- **to ensure that changes and the current revision status of documents are identified**
- **to ensure that relevant versions 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 prevent the unintended use of obsolete documents, and to apply suitable identification to them if they are retained for any purpose**

BRC has a process to assure the timely review, distribution and implementation of all customer engineering standards/specifications and changes based on customer required schedule. Timely review occurs as soon as possible and will not exceed two working weeks.

BRC maintains a record of the date when a change is implemented in production. Implementation dates are also included in documents.

Records are established and maintained to provide evidence of conformity to requirements and of the effective operation of the quality management system. Records remain legible, readily identifiable and retrievable. A documented procedure is established to define the controls needed for the identification, storage, protection, retrieval, retention time and disposition of records.

Regulatory and customer requirements also have record retentions established.

Only those records needed for the planning and operation of the QMS need to be controlled. This could exclude occupational health and safety.

BRC is responsible for documenting record control procedures.

Section 5.0 Management Responsibility

5.1 Management Commitment

BRC's top management provides evidence of its commitment to the development and implementation of the quality management system and continually improving its effectiveness by:

- **communicating to throughout BRC the importance of meeting customer as well as 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

BRC's top management ensures that customer requirements are determined and are met with the aim of enhancing customer satisfaction.

5.3 Quality Policy

BRC's top management ensures that the quality policy

- **is appropriate to the purpose of the organization**
- **includes a commitment to comply with requirements and continually improve the effectiveness of the quality management system**
- **provides a framework for establishing and reviewing quality objectives and**
- **is reviewed for continuing suitability**

5.4 Planning

Top management of BRC ensures that quality objectives, including those needed to meet requirements for product are established at relevant functions and levels within the organization. The quality objectives are measurable and consistent with the quality policy.

Top management has defined quality objectives and measurements that are included in the business plan and used to deploy the quality policy

The integrity of the quality management is maintained when changes to the quality management system are planned and implemented.

5.5 Responsibility, Authority and Communication

BRC ensures that the responsibilities and authorities are defined and communicated within the organization.

BRC personnel responsible for product quality are promptly informed of products or processes that do not conform to requirements. Personnel responsible for product quality have the authority to stop production to correct quality problems. Production operations on all shifts are staffed with personnel in charge of, or delegated responsibility for, ensuring product quality.

The Director of Quality is the management representative for BRC's quality management system. A consultant can not represent BRC as management representative. The responsibility and authority of the management representative includes:

- **ensuring that processes needed for the quality management system are established, implemented and maintained**
- **reporting to top management on the performance of the quality management system and any need for improvement and**
- **ensuring the promotion of awareness of customer requirements throughout the organization**

BRC has designated personnel with responsibility and authority to ensure customer requirements are addressed. This includes selection of special characteristics, setting quality objectives and related training, corrective and preventive actions, product design and development. BRC Engineering is the "Customer Representative" until the part is PPAP approved. Once approved, the Quality Manager has the responsibility and authority to assure requirements are addressed and is the "Customer Representative". The "Customer Representative" will assure that all requirements are met.

Appropriate communication processes have been established within the organization and communication takes place regarding the effectiveness of the quality management system.

5.6 Management Review

BRC's top management reviews the organization's quality management system at planned intervals to ensure its continuing suitability, adequacy and effectiveness. This review includes assessing opportunities for improvement and the need for changes to the quality management system, including the quality policy and quality objectives. Records are retained per the record retention procedure.

The management reviews include all requirements of the quality management system and its performance trends. Part of the management review is the monitoring of quality objectives and the regular reporting and evaluation of the cost of poor quality.

The input to management review includes information on:

- **results of audits**
- **customer feedback**
- **process performance and product conformity**
- **status of preventive and corrective actions**
- **follow-up actions from previous management reviews**
- **changes that could affect the quality management system and**

- **recommendations for improvement**

Input to management review includes an analysis of actual and potential field failures and their impact on quality, safety or the environment. Management reviews are conducted at a minimum of once per year.

The output from the management review includes any decisions and actions related to:

- **improvement of the effectiveness of the quality management system and its processes**
- **improvement of product related to customer requirements and**
- **resources needs**

Section 6.0 Resource Management

6.1 Provisions of Resources

BRC has determined and provided the resources needed to:

- **implement and maintain the quality management system and continually improve its effectiveness and**
- **enhance customer satisfaction by meeting customer requirements**

6.2 Human Resources

Personnel performing work affecting product conformity to the quality requirements are competent on the basis of appropriate education, training, skills and experience. The boundaries of competence only extend to individuals who impact product conformity to defined requirements. This does not just include those who are directly involved in production. For example, as the decisions made by management affect product conformity, they must be competent as well. BRC has:

- **determined the necessary competence for personnel performing work affecting product quality**
- **provided training or taken other actions to satisfy these needs**
- **evaluated the effectiveness of the actions taken**
- **ensured that its personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives and**
- **maintained appropriate records of education, training, skills and experience**

BRC ensures that personnel with product design responsibility are competent to achieve design requirements and are skilled in applicable tools and techniques

BRC has established and maintained documented procedures for identifying training needs. Personnel performing specific assigned tasks are qualified, as required, with particular attention to the satisfaction of customer requirements. **If the personnel have not yet attained the competence needed to perform their job, BRC must provide**

training to ensure that competence is achieved. BRC must prove to itself that the person can, in fact, perform.

One of the forms of training is on-the-job. On-the-job training for personnel in any new or modified job affecting product quality has been/will be provided. This include contract or agency personnel.

BRC utilizes a war-on-waste (WOW) program to motivate and empower employees. The process rewards employees for making goals of labor, material and quality. The WOW program makes employees aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives.

6.3 Infrastructure

BRC has determined, provided and maintained the infrastructure needed to achieve conformity to product requirements. Infrastructure includes, as applicable:

- **buildings, workspace and associated utilities**
- **process equipment (both hardware and software) and**
- **supporting services (example; transport or communication)**
- **databases and information technology**

BRC uses a multidisciplinary approach for developing plant, facility and equipment plans. Plant layouts will optimize material travel, handling and value-added use of floor space, and will facilitate synchronous material flow. Contingency plans have been developed to satisfy customer requirements in the event in the event of an emergency such as utility interruptions, labor shortages, key equipment failure and field returns.

6.4 Work Environment

BRC has determined and managed the work environment, only as it extends to product quality, needed to achieve conformity to product requirements.

Product safety and means to minimize potential risks to employees has been addressed by BRC especially in the design and development process and in manufacturing process activities

BRC maintains its premises in a state of order, cleanliness and repair consistent with the product and manufacturing process needs.

Section 7.0 Product Realization

7.1 Planning of Product Production

BRC has planned and developed the processes needed for product realization. Planning of product realization is consistent with the requirements of the other processes of the quality management system. In planning product realization, BRC has determined the following, as appropriate:

- **quality objectives and requirements for the product**
- **the need to establish processes, documents, and provide resources specific to the product**
- **required verification, validation, monitoring, inspection and test activities specific to the product and the criteria for product acceptance**
- **records needed to provide evidence that the realization processes and resulting product meet requirements**

Customer requirements and references to its technical specifications have been included in the planning of product realization as a component of the quality plan.

Acceptance criteria has been defined and where required, approved by the customer. For attribute data, the acceptance level is zero defects.

BRC ensures the confidentiality of customer-contracted products and projects under development, and related product information.

BRC has a process to control, react **and measure** changes that impact product realization. The effects of any change, including those changes caused by any supplier, have been addressed and verification and validation activities are defined to ensure compliance with customer requirements. Changes are validated before implementation.

For proprietary designs, impact on form, fit and function are reviewed with the customer so that all effects can be properly evaluated.

7.2 Customer-related Processes

BRC has determined:

- **requirements specified by the customer, including the requirements for delivery and 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, and**
- **any additional requirements determined by BRC**

BRC demonstrates conformity to customer requirements for designation, documentation and control of special characteristics.

Prior to quoting a new job, Marketing performs a feasibility study. Once a purchase order is received, BRC Engineering and Quality reviews the requirements related to the product during the APQP meetings. This review is with a multidiscipline group that includes Purchasing and Manufacturing:

- **product requirements are defined**
- **contract or order requirements differing from those previously expressed are resolved, and**
- **BRC has the ability to meet the defined requirements**

Records of the results of the review and actions arising from the review are maintained. Where the customer provides no documented statement of requirement, the customer requirements are confirmed by BRC before acceptance.

When product requirements are changed, BRC ensures that relevant documents are amended and that relevant personnel are made aware of the changed requirements.

BRC investigates, confirms and documents the manufacturing feasibility of the proposed products in contract review process, including risk analysis.

BRC has determined and implemented effective arrangements for communicating with customers in relation to:

- **product information**
- **enquiries, contracts or order handling, including amendments, and**
- **customer feedback, including customer complaints**

BRC communicates necessary information, including data, in customer-specific language and format (e.g. computer-aided design data, electronic data exchange).

(Post delivery activities include actions under warranty provisions, contractual obligations such as maintenance services and supplementary services such as recycling or final disposal.)

7.3 Design and Development

BRC plans and controls the design and development of product. Product design is the responsibility of Engineering during APQP. Process design is the responsibility of the manufacturing location. During the design and development planning, BRC determines:

- the design and development stages
- the review (for BRC to evaluate if the design can meet requirements and to see if any changes need to be made), verification (where BRC has ensured that requirements have been met) and validation (where BRC proves that the design can perform as required) that are appropriate to each design and development stage, and
- the responsibilities and authorities for design and development

BRC manages the interfaces between different groups involved in design and development to ensure effective communication and clear assignment of responsibility. Planning output is updated, as appropriate, as the design and development progresses. Production provisions extend to how product is preserved, handled, etc, to ensure product conformity. Product status must be identified throughout product realization and not just the final product.

BRC uses a multidisciplinary approach to prepare for product realization, including:

- development/finalization and monitoring of special characteristics
- development and review of FMEAs, including actions to reduce potential risks, and
- development and review of control plans

Inputs relating to product requirements are determined and records maintained. These inputs include:

- functional and performance requirements
- applicable statutory and regulatory requirements
- where applicable, information derived from previous similar design, and
- other requirements essential for design and development

The design inputs are reviewed for adequacy. Requirements are complete, unambiguous and not in conflict with each other.

BRC identifies, documents and reviews the product design inputs requirements, including the following:

- customer requirements (contract review) such as special characteristics, identification, traceability and packaging
- use of information: BRC will have a process to deploy information gained from previous design projects, competitor analysis, supplier feedback, internal input, field data, and other relevant sources, for current and future projects of a similar nature
- targets for product quality, life reliability, durability, maintainability, timing and cost

BRC identifies, documents and reviews the manufacturing process design input requirements including:

- product design output data
- targets for productivity, process capability and cost
- customers requirements, if any, and
- experience from previous developments

BRC identifies special characteristics and:

- include all special characteristics in the control plan
- comply with customer-specified definitions and symbols, and
- identify process control documents including drawings, FMEAs, control plans, and operator instructions with the customer's special characteristic symbol or BRC's equivalent symbol or notation to include those process steps that affect special characteristics (can include product characteristics and process parameters)

The outputs of design and development are provided in a form that enables verification against the design and development input and will be approved prior to release.

Design and development outputs:

- **meet the input requirements for design and development**
- **provide appropriate information for purchasing, production and for service provision**
- **contain or reference product acceptance criteria, and**
- **specify the characteristics of the product that are essential for its safe and proper use**
- **include requirements related to preservation**

The product design output are expressed in terms that can be verified and validated against product design input requirements. The product design output includes:

- design FMEA, reliability results
- product special characteristics and specifications
- product error-proofing, as appropriate
- product definition including drawings or mathematically based data
- product design reviews results, and
- diagnostic guidelines where applicable

The manufacturing process design output is expressed in terms that can be verified against manufacturing process design input requirements and validated. The manufacturing process design output includes:

- specifications and drawings
- manufacturing process flow chart/layout
- manufacturing process FMEAs
- control plan
- work instructions
- process approval acceptance criteria

- data for quality, reliability, maintainability and measurability
- results of error-proofing activities, as appropriate, and
- methods of rapid detection and feedback of product/manufacturing process nonconformities

At suitable stages, systematic reviews of design and development are performed in accordance with planned arrangements:

- to evaluate the ability of the results of design and development to meet requirements, and
- to identify any problems and propose necessary actions

Participants in such reviews include representatives of functions concerned with the design and development stage(s) being reviewed. Records of the results of the reviews and any necessary actions are maintained.

Measurements at specified stages of design and development are defined, analyzed and reported with summary results as an input to management review through on time PPAP submission and first time PPAP approval.

Verification is performed in accordance with planned arrangements to ensure that the design and development outputs have met the design and development input requirements. Records of the results are maintained.

Design and development validation is performed in accordance with planned arrangements to ensure that the resulting product is capable of meeting the requirements for the specified application or intended use, where known. Wherever practicable, validation is completed prior to the delivery or implementation of the product. Records of the results of validation and any necessary actions are maintained.

Design and development validation is performed in accordance with customer requirements including program timing.

When required by the customer, BRC has a prototype program and control plan. Whenever possible, BRC uses the same suppliers, tooling and manufacturing processes as used in production.

BRC conforms to a product and manufacturing process approval procedure recognized by the customer (PPAP). This product and manufacturing (PPAP) process approval procedure also applies to suppliers.

Design and development changes are identified and records maintained. The changes are reviewed, verified and validated, as appropriate, and approved before implementation. The review of design and development changes includes the evaluation of the effect of the changes on constituent parts and product already delivered. Records of the results of the review of changes and any necessary actions are maintained.

7.4 Purchasing

BRC ensures that purchased product conforms to specified purchase requirements. The type and extent of control applied to the supplier and the purchased product is dependent upon the effect of the purchased product on subsequent product realization or the final product.

BRC evaluates and selects suppliers based on their ability to supply products in accordance with BRC and customer requirements. Criteria for selection, third party registered or evaluation, re-evaluation as established. Records of the results of evaluations and any necessary actions arising from the evaluation are maintained.

All purchased products or materials used in product conform to applicable regulatory requirements.

BRC performs supplier quality management system development with the goal of supplier conformity with this Technical Specification. Conformity with ISO 9001:2008 &/or TS 16949: 2009 is the first step in achieving this goal. Unless otherwise specified by the customer, direct material suppliers to BRC are third party registered to ISO 9001:2008 &/or TS 16949: 2009 by an accredited third-party certification body or evaluated and approved by BRC Purchasing and Quality.

Where specified by the contract, BRC will purchase products, materials or services from approved sources. The use of customer-designated sources, including tool/gage suppliers, does not relieve BRC of the responsibility for ensuring the quality of purchased products.

Purchasing information describes the product to be purchased, including where appropriate:

- requirements for approval of product, procedures, processes and equipment
- requirements for qualification of personnel, and
- quality management system requirements

BRC ensures the adequacy of specified purchase requirement prior to their communication to the supplier

BRC establishes and implements the inspection or other activities necessary for ensuring that purchased product meets specified purchase requirements.

Where BRC or its customer intends to perform verification at the supplier's premises, BRC states the intended verification arrangements and method of product release in the purchasing information.

BRC has a process to assure the quality of purchased product utilizing one or more of the following methods:

- receipt of, and evaluation of, statistical data
- receiving inspection and/or testing such as sampling based on performance

- second- or third-party assessments or audits of supplier sites, when coupled with records of acceptable delivery product quality
- part evaluation by a designated laboratory
- another method agreed with the customer

Supplier performance is monitored through the following indicators:

- delivery product quality
- customer disruptions including field returns
- delivery schedule performance (including incidents of premium freight)
- special status customer notifications related to quality or delivery issues

7.5 Production and Service Provision

BRC has a plan and carries out production and service provision under controlled conditions. Controlled conditions include, as applicable:

- **the availability of information that describes the characteristics of the product**
- **the availability of work instructions, as necessary**
- **the use of suitable equipment**
- **the availability and use of monitoring and measuring devices**
- **the implementation of monitoring and measurement, and**
- **the implementation of release, delivery and post-delivery activities.**

BRC develops control plans for the product supplied. The control plans will be developed pre-launch, prototype and production. The control plan is developed in accordance to annex A of the ISO/TS 16949:2009 (E) manual.

Documented work instructions for all employees having responsibilities for the operation of processes that impact product quality are developed. The documents are accessible for use at the work instructions. The work instructions are derived from documents such as the quality plan, control plan and other product realization process.

Job set-ups are verified whenever performed, such as an initial run of a job, material changeover or job change. Work instructions are available for set-up personnel. When applicable, statistical methods are used for verification.

Key process equipment is identified and resources provided for machine/equipment maintenance. As a minimum preventive maintenance includes:

- planned maintenance activities
- packaging and preservation of equipment, tooling and gauging
- availability of replacement parts for key manufacturing equipment
- documenting, evaluating and improving maintenance objectives

Predictive maintenance methods are utilized to continually improve the effectiveness and efficiency of production equipment.

BRC has established and implemented a system for production tooling management including:

- maintenance and repair facilities and personnel
- storage and recovery
- set-up
- tool design modification documentation, including engineering change level
- tool modification and revision to documentation
- tool identification, defining the status, such as production, repair or disposal

Production has been scheduled in order to meet customer requirements, such as just-in-time supported by an information system that permits access to production information at key stages of the process and is order driven.

BRC does not have a service agreement with any customers. If and when applicable, service concerns will be addressed on the Quality Concern form. When completed, the form is copied to engineering, manufacturing and quality as well as other appropriate personnel.

BRC validates all processes for production and service provision where the resulting output cannot be verified by subsequent monitoring or measurement. This includes any processes where deficiencies become apparent only after the product is in use. Validation demonstrates the ability of these processes to achieve planned results. BRC has established arrangements for these processes including as applicable:

- **defined criteria for review and approval of the processes**
- **approval of equipment and qualification of personnel**
- **use of specific methods and procedures**
- **requirements of records, and**
- **revalidation**

Where appropriate, BRC identifies the product by suitable means throughout product realization. BRC identifies the product status with respect to monitoring and measurement requirements. Where traceability is required, BRC has control and record the unique identification of the product.

For ISO/TS 16949:2009, identification and traceability are required.

Care is exercised with customer property while it is under the control or being used by BRC. BRC identifies, verifies, protects and safeguards customer property provided for use or incorporation into the product. If any customer property is lost, damaged or otherwise found to be unsuitable for use, it is reported to the customer and records maintained. (Customer property includes intellectual property.)

Property can include personal data (e.g. social security numbers).

Customer-owned tools, manufacturing, test, inspection tooling and equipment is permanently marked so that the ownership of each item can be determined.

BRC preserves the conformity of product during internal processing and delivery to the intended destination. The preservation includes identification, handling, packaging, storage and protection. Preservation also applies to the constituent parts of the product.

The condition of product in stock is assessed at appropriate planned intervals in order to detect deterioration. First-in-first-out (FIFO) is used as an inventory management system to optimize inventory turns over time and assure stock rotation. Obsolete products are controlled in a similar manner to nonconforming product.

7.6 Control of Monitoring and Measuring Devices

BRC determines the monitoring and measurement, including equipment, software and devices that are purposed for monitoring and measuring, regardless of their original intended purpose, to be undertaken and the monitoring and measuring devices needed to provide evidence of conformity of product to determined requirements.

BRC establishes processes to ensure that monitoring and measurement can be carried out in a manner that is consistent with the requirements. When necessary to ensure valid results, measuring equipment will:

- **be calibrated or verified at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards; where no such standards exist, the basis used for calibration or verification will be recorded**
- **be adjusted or re-adjusted as necessary**
- **be identified to enable the calibration status to be determined**
- **be safeguarded from adjustments that would invalidate the results**
- **be protected from damage and deterioration during handling, maintenance and storage**

If equipment is found to be out of calibration, BRC will assess and record the validity of the previous measuring results when the equipment is found not to conform to requirements. Appropriate action will be taken on the equipment and any product affected. Records of the results of calibration and verification will be maintained. When used in monitoring and measurement of specified requirements, the ability of computer software to satisfy the intended application is confirmed. This action is undertaken prior to initial use and reconfirmed as necessary.

Statistical studies are conducted to analyze the variation present in the results of each type of measuring and test equipment. This applies to measurement systems

referenced in the control plan. The analytical methods and acceptance criteria used conform to those in customer reference manuals on measurement systems analysis. Other analytical methods and acceptance criteria may be used if approved by the customer.

Records of the calibration/verification activity for all gages, measuring and test equipment, needed to provide evidence of conformity of product to determined requirements, including employee-and customer-owned equipment include:

- equipment identification, including the measurement standard against which the equipment is calibrated
- revisions following engineering changes
- any out-of-specification readings as received for calibration/verification
- an assessment of the impact of out-of-specification condition
- statements of conformity to specification after calibration/verification, and
- notification to the customer if suspect product or material has been shipped

BRC's internal laboratory facility has a defined scope that includes its capability to perform the required inspection, test or calibration services. This laboratory scope is included in the quality management system documentation. The laboratory specifies and implements, as a minimum, technical requirements for:

- adequacy of the laboratory procedures
- competency of the laboratory personnel
- testing of the product
- capability to perform these services correctly, traceable to the relevant process standard (e.g. ASTM), and
- review of the related records

External/commercial/independent laboratory facilities used for inspection, test or calibration services by BRC has a defined scope that includes the capability to perform the required test or calibration. The supplier will be acceptable to the customer and be accredited to ISO/IEC 17025 or national equivalent.

Section 8.0 Measurement, Analysis and Improvement

8.1 General Requirements

BRC plans and implements the monitoring, measurement, analysis and improvement processes needed:

- **To demonstrate conformity of the product**
- **To ensure conformity of the quality management system, and**
- **To continually improve the effectiveness of the quality management system**

This includes determination of applicable methods, including statistical techniques, and the extent of their use.

Appropriate statistical tools for each process are determined during advance quality planning and included in the control plan.

Basis statistical concepts, such as variation, control (stability); process capability and over-adjustment are understood and utilized throughout BRC.

8.2 Monitoring and Measurement

BRC monitors information relating to customer perception as to whether the customer requirements have been met.

Customer satisfaction with BRC is monitored through continual evaluation of performance of the realization processes. Performance indicators are based on objective data and include, but not limited to:

- delivered part quality performance
- customer disruptions including field returns
- delivery schedule performance (including incidents of premium freight), and
- customer notifications related to quality or delivery issues.
- customer surveys

BRC monitors the performance of manufacturing processes to demonstrate compliance with customer requirements for produce quality and efficiency of the process.

BRC conducts internal audits at planned intervals to determine whether the quality management system:

- conforms to the planned arrangements to the requirements of ISO 9001:2008 and to the quality management system requirements established to BRC, and
- is effectively implemented and maintained

The internal audit program is planned, taking into consideration the status and importance of the processes and areas to be audited, as well as the results of previous audits. The audit criteria, scope, frequency and methods is defined. Selection of auditors and conduct of audits ensures objectivity and impartiality of the audit process. Auditors do not audit their own work.

The responsibilities and requirements for planning and conducting audits, and for reporting results and maintaining records is defined in a documented procedure.

The management responsible for the area being audited ensures that actions are taken without undue delay to eliminate detected nonconformities and their causes. Follow-up activities include the verification of the actions taken and the reporting of verification results.

Actions deemed necessary and taken by management to address nonconformities identified during the internal audit process must follow the requirements of the corrective action process (i.e. root cause, correction and corrective action).

BRC audits the quality management system to verify compliance with ISO/TS 16949:2009 and any additional quality management system requirements.

Each manufacturing process is audited to determine its effectiveness.

Products at appropriate stages of production and delivery are audited to verify conformity to all specified requirements, such as product dimensions, functionality, packaging and labeling, at a defined frequency.

Internal audits cover all quality management related processes, activities and shifts, and are scheduled to an annual plan. When internal/external nonconformities or customer complaints occur, the audit is increased.

BRC internal auditors are qualified to audit the requirements of ISO/TS 16949:2009.

BRC applies suitable methods for monitoring and, where applicable, measurement of the quality management system processes. These methods demonstrate the ability of the processes to achieve planned results. When planned results are not achieved, corrective and preventive action is taken, as appropriate, to ensure conformity of the product.

BRC emphasizes that correction and corrective actions are not only to be taken to preserve the conformity of the product, but also the quality management system. For example, internal rejection/scrap rates show evidence that BRC is preserving product conformity and is taking intermediate action to prevent bad product from being shipped to the customers.

Product can be released to other internal processes despite planned arrangements not satisfactory completed as long as it conforms prior to release to the customer.

BRC performs process studies on all new manufacturing processes to verify process capability and to provide additional input for process control. The results of the process studies are documented with specifications, where applicable, for means of production, measurement and test, and maintenance instructions. These documents include objectives for manufacturing process capability, reliability, maintainability and availability, as well as acceptance criteria.

BRC maintains manufacturing process capability or performance as specified by the customer approval process requirements. Control plans and process flow diagrams are implemented, including adherence to the specified:

- measurement techniques
- sampling plans
- acceptance criteria, and
- reaction plans when acceptance criteria are not met

Significant process events, such as tool change or machine repair are recorded.

Reaction plans are initiated from the control plan for characteristics that are either not statistically capable or are unstable. The reaction plans include containment of product and 100% inspection as appropriate. A corrective action plan is completed indicating specific timing and assigned responsibilities to assure that the process become stable and capable. The plans are reviewed and approved by the customer when required. Records are maintained of effective dates of process changes.

BRC monitors and measures the characteristics of the product to verify that product requirements have been met. This is carried out at appropriate stages of the product realization process in accordance with the planned arrangements.

Evidence of conformity with the acceptance criteria is maintained. Records indicate the person(s) authorizing release of the product.

Product release does not proceed until all the planned arrangements have been satisfactorily completed, unless otherwise approved by a relevant authority, and where applicable by the customer.

A layout inspection and a functional verification to applicable customer engineering material and performance standards is performed for each product as specified in the control plans. Results are available for customer review.

For organizations manufacturing parts designated by the customer as “appearance items”, the organization provides:

- appropriate resources including lighting for evaluation
- masters for color, grain, gloss, metallic brilliance, texture, distinctness of image, as appropriate
- maintenance and control of appearance masters and evaluation equipment, and
- verification that personnel making appearance evaluations are competent and qualified to do so

At this time, BRC does not have appearance items.

8.3 Control of Nonconforming Product

Product which does not conform to requirements is identified and controlled to prevent its unintended use or delivery. The controls and related responsibilities and authorities for dealing with nonconforming product are defined in a documented procedure.

Nonconforming product is addressed by one or more of the following ways:

- **by taking action to eliminate the defected nonconformity**
- **by authorizing its use, release, or acceptance under concession by a relevant authority and, where applicable, by the customer**
- **by taking action to preclude its original intended use or application**

Records of the nature of nonconformities and any subsequent actions taken, including concessions obtained, are maintained. When nonconforming product is corrected, it is subject to re-verification to demonstrate conformity to the requirements. When nonconforming product is detected after delivery or use has started, action appropriate to the effects of the nonconformity is taken.

Product with unidentified or suspect status is classified as nonconforming (or suspect) product.

Instructions for rework, including re-inspection requirements, are accessible to and utilized by the appropriate personnel.

Customers are informed promptly in the event that nonconforming product has been shipped.

Customer concession or deviation permit is obtained prior to further processing whenever the product or manufacturing process is different from that which is currently approved. Records are maintained of the expiration date or quantity authorized. When the deviation expires, the product complies with the customer requirements. Material shipped on an authorization is properly identified on each shipping container.

This applies equally to purchased product. BRC agrees with any requests from suppliers before submission to the customer.

8.4 Analysis of Data

BRC determines, collects and analyzes appropriate data to demonstrate the suitability and effectiveness of the quality management system evaluates where continual improvement of the effectiveness of the quality management system can be made. This includes data generated as a result of monitoring and measurement and from other relevant sources.

The analysis of data provides information relating to:

- **customer satisfaction**
- **conformity to product requirements**
- **characteristics and processes and products including opportunities for preventive action, and**
- **suppliers**

Trends in quality and operational performance are compared with progress toward objectives and lead to action to support the following:

- development of priorities for prompt solutions to customer-related problems
- determination of key customer-related trends and correlation for status review, decision-making and longer term planning
- an information system for the timely reporting of product information arising from usage

8.5 Improvement

BRC continually improves the effectiveness of the quality management system through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review.

BRC has defined a process for continual improvement through the Quality Operating System (QOS), Business Operation System (BOS) and War-On-Waste (WOW) programs.

Manufacturing process improvements continually focus upon control and reduction of variation in product characteristics and manufacturing process parameters.

Action is taken to eliminate the cause of nonconformities in order to prevent recurrence. Corrective actions are appropriate to the effects of the nonconformities encountered. A documented procedure has been established to define requirements for:

- **reviewing nonconformities (including customer complaints)**
- **determining the causes of nonconformities**
- **evaluating the need for action to ensure that nonconformities do not recur**
- **determining and implementing action needed**
- **records of the results of action taken, and**
- **reviewing corrective action taken**

Unless otherwise directed by a customer, BRC utilizes the 8D problem-solving approach that leads to root cause identification and elimination.

When possible, BRC error-proofing methods are incorporate in the corrective action process. Lessons learned are applied to other similar processes and products to eliminate the potential cause of nonconformity.

Rejected parts returned from the customer are manufacturing plants, engineering facilities and dealerships, are analyzed in a timely basis. Records of the analyses are kept and made available upon request.

BRC determines action to eliminate the causes of potential nonconformities in order to prevent their occurrence. Preventive actions are appropriate to the effects of the potential problems. A documented procedure has been established to define requirements for:

- **determining potential nonconformities and their causes**
- **evaluating the need for action to prevent occurrence of nonconformities**
- **determining and implementing action needed**
- **records of results of action taken, and**
- **reviewing preventive action taken.**

Nonconformity can have multiple causes. BRC must consider this when conducting root cause corrective action.

It is not enough to simply review corrective actions and insure that procedures were changed, personnel have been re-trained, and the processes were amended. BRC must review whether or not the action(s) were effective; i.e. did they successfully eliminate the risk of the nonconforming condition.

Similarly, BRC must determine whether or not the preventive action (s) taken were effective in eliminating the risk of nonconformity.

Section 9.0 Customer Specified Requirements

If customer requirements or conditions are specified in an accepted purchase agreement that exceed or deviate from the requirements of the quality management system, those requirements will supercede the standard requirements of this management system and its supporting procedures.

BRC retains copies of special agreements and supplemental reference documents that relate to customer specified requirements. Those variations will be incorporated into the working documents of the organization and communicated to the appropriate personnel.

Some customer specified requirements can be located by checking the web site IAOB at iaathglobaloversight.org.

Section 10.0 Supporting Procedures and Processes

Quality Procedure: 4.2.3.1.1	Control of Documents
Quality Procedure: 4.2.4.1.1	Control of Records
Quality Procedure: 6.2.2.2.1	Training
Quality Procedure: 6.3.2.1.1	Contingency Plan
Quality Procedure: 8.2.2.1.1	Internal Audits
Quality Procedure: 8.3.1.1.1	Control of Nonconforming Product
Quality Procedure: 8.5.2.1.1	Corrective Action
Quality Procedure: 8.5.3.1.1	Preventive Action
Process #: APQP-1	Advanced Product Quality Planning
Process #: BOS-1	Business Operating System
Process #: Continual Imp.-1	Continual Improvement
Process #: Corrective Action-1	Corrective Action
Process #: Customer Feedback-1	Customer Feedback
Process #: Customer Service-1	Customer Service
Process #: Design-1	Design
Process #: Feasibility Review-1	Feasibility Review
Process #: Inspect. & Testing-1	Inspection and Testing
Process #: Internal Audit-1	Internal Audit
Process #: Mgt. Review-1	Management Review
Process #: Manufacturing-1	Manufacturing
Process #: Marketing-1	Marketing
Process #: MSA	Measurement System Analysis
Process #: Non-Conform.Mat-1	Non-Conforming Material
Process #: On Time Delivery-1	On Time Delivery
Process #: Packaging/Shipping-1	Packaging/Shipping

Process #: Planning-1	Planning
Process #: PPAP-1	Production Part Approval Process
Process #: Preventive Actions-1	Preventive Actions
Process #: Production-1	Production
Process #: Purchasing-1	Purchasing
Process #: QMS Doc.-1	Quality Management System Documentation
Process #: QOS-1	Quality Operating System
Process #: Quoting-1	Quoting
Process #: Receiving Insp.-1	Receiving Inspection
Process #: Statistical Tech.-1	Statistical Techniques
Process #: Training-1	Training

Section 11.0 Glossary of Terms

Terms and definitions:

<i>Action Item</i>	An activity that is assigned resources and is intended to provide some benefit to the organization.
<i>Audit</i>	A survey of an area or element of a standard for the purpose of determining conformance to requirements.
<i>BRC</i>	BRC Rubber & Plastics, Inc.
<i>Competence</i>	Demonstrated ability to apply knowledge and skills.
<i>Concession</i>	Permission to use or release a product that does not conform to specified requirements.
<i>Conformity</i>	Fulfillment of a requirement
<i>Continual Improvement</i>	Recurring activity to increase the ability to fulfill requirements
<i>Corrective Action</i>	The action taken to eliminate the cause of a detected nonconformity or other undesirable potential situation.
<i>Customer Satisfaction</i>	Customer's perception of the degree to which the customer's requirements have been fulfilled
<i>Document</i>	Information and its supporting medium.
<i>Effectiveness</i>	Extent to which planned activities are realized and planned results achieved.
<i>Efficiency</i>	Relationship between the result and the resources used

ISO/TS 16949	The international specification that defines quality assurance requirements for the automotive industry.
Measurement Control System	Set of interrelated or interacting elements necessary to achieve metrological confirmation and continual control of measurement processes.
Measurement process	Set of operations to determine the value of a quantity.
Nonconformity	Non-fulfillment of a requirement.
Objective evidence	Data supporting the existence or verity of something.
Preservation	Maintain the quality of the product, prevent deterioration.
Preventive Action	Action taken to eliminate the cause of a potential nonconformity or other undesirable potential situation.
Procedure	A specified way to carry out an activity or a process.
Process	Set of interrelated or interacting activities which transforms inputs into outputs.
Product	Results of a process.
Quality	A value placed on a product or service relative to how well it meets expectations.
Quality Management	To direct and control an organization with regard to quality
Quality Plan	Document specifying which procedures and associated resources are applied by whom and when to a specific project, product or contract.
Record	Historic evidence that something was done. Records provide information that can be used to make business decisions. They provide traceability of issues and they are objective evidence of compliance or noncompliance to documented policies and procedures.
Requirement	Need or expectation that is stated, generally implied or obligatory
Supplier	Organization or person that provides a product.
Statistical Technique	A method of collecting, organizing and analyzing data to better understand performance.
Top Management	Person or group of people who directs and controls an organization at the highest level

Traceability

Ability to trace the history, application or location of that which is under consideration

Section 12.0 Policy Manual Revision History

<u>Rev.</u>	<u>Date</u>	<u>Approval</u>	<u>Nature of Change</u>
0	03/01/04	G. Eutsler	Original
1	04/27/04	G. Eutsler	5.5 Add Eng. and Q. Mgr. as customer rep. 5.6 Add Management reviews are conducted a minimum of annually 7.2 Add Marketing, Engineering, Quality, Purchasing and Manufacturing has responsibility and authority to review requirements related to the product 7.3 Add responsibility of product and product design 7.4 Change "any" to "all" for validation of processes for production and service
2	05/10/07	G. Eutsler	Added Montpelier as a certified ISO/TS 16949:2002 location. Deleted Montpelier as an ISO 9001:2000 location
3	06/01/09	G. Eutsler	Entire Manual upgrade to ISO 9000:2008 and ISO/TS 16949:2009 requirements
4	07/23/09	G. Eutsler	Vice President of Quality changed to Customer Quality Liaison/Certification Specialist
5	03/12/10	R.Shepherd	7.4 Purchasing Added Criteria for selection, third party registered or evaluation Page 5 change Pontiac address to Auburn Hills
6.	11/29/10	R Shepherd	Page 4 Changed Pontiac to Sales, and ISO 9001: 2004 to ISO 2008 Page 5 Address for Detroit changed to Detroit Sales. Entre Manual : Customer Quality Liaison / Certification Specialist was changed to Director of Quality . Page 8 Process Map updated to include Environmental Impacts, Aspects & Impacts,