



1822 S. Research Loop Rd. Tucson AZ. 85710 Phone: (520) 881-3982 Fax: (520) 322-0482

QUALITY MANAGEMENT SYSTEMS MANUAL

AS 9100 Rev C / ISO 9001-2008

REVISION DATE: *March 19, 2014*

APPROVED BY: _____

A handwritten signature in black ink, appearing to read "Brad Smith", written over a horizontal line.

**BRAD SMITH
PRESIDENT & GM**

APPROVED BY: _____

A handwritten signature in black ink, appearing to read "David R Bennett", written over a horizontal line.

**DAVID R BENNETT
QA MANAGER**



Quality Manual

Revision Date: 3/19/2014

Page 1

QUALITY SYSTEM MANUAL INDEX

GENERAL

Index and Revision Status

Introduction /Company Background

Page 1-2

Page 3-3

SECTION 4 - QUALITY MANAGEMENT SYSTEM

General Requirements

Quality System Process Map

Documentation Requirements

Page 4-4

Page 5-5

Page 6-7

SECTION 5 - MANAGEMENT RESPONSIBILITY

Management Commitment

Customer Focus

Quality Policy

Planning

Responsibility, Authority and Communication

Management Review

Mission Statement/Quality Policy

Organizational Chart

Page 8-8

Page 8-8

Page 8-8

Page 9-9

Page 9-9

Page 9-10

Page 11-11

Page 12-12

SECTION 6 - RESOURCE MANAGEMENT

Provision of Resources

Human Resources

Infrastructure

Work Environment

Page 13-13

Page 13-13

Page 13-13

Page 14-14

INDEX Continued

SECTION 7 - PRODUCT REALIZATION

<u>Planning of Product Realization</u>	Page 15-16
<u>Customer-related Processes</u>	Page 16-18
<u>Purchasing</u>	Page 18-20
<u>Production and Service Provision</u>	Page 21-24
<u>Control of Monitoring and Measuring Equipment</u>	Page 25-25

SECTION 8 - MEASUREMENT, ANALYSIS AND IMPROVEMENT

<u>General</u>	Page 26-26
<u>Monitoring and Measurement</u>	Page 26-28
<u>Control of Nonconforming Product</u>	Page 29-29
<u>Analysis of Data</u>	Page 30-30
<u>Improvement</u>	Page 30-31

Introduction

Airtronics, Inc. has developed and implemented a quality management system to demonstrate its ability to provide product that meets customer and applicable statutory /regulatory requirements, and to maintain customer satisfaction through the effective application of the system, including continual improvement and the prevention of nonconformity.

The purpose of this manual is to define and describe the quality system and to provide the framework for all activities comprising the quality system.

Another purpose of this manual is to present the quality system to our customers and other external interested parties to provide them with our overall implemented quality management system and controls that are implemented at *Airtronics, Inc.* to assure quality.

The quality system operates within the international standard AS 9100 Rev C/ISO 9001-2008 and is structured as such.

Airtronics Inc. also holds several FAA repair station ratings and maintains a quality system in accordance with FAR Part 145.

Company Background

Airtronics, Inc. was founded in 1975 by Jim Smith.

In 1997, Jim's son, Brad Smith was appointed President with responsibility for all company functions.

Airtronics has evolved from primarily a maintenance, repair and overhaul facility into a company with a wide variety of capabilities. Our expanded capabilities include a state of the art machine shop and manufacturing capabilities for all industry disciplines. We are complimented by an engineering staff with research and development and design capability.

We maintain ongoing relationships with the all branches of the United States Military, the FAA, and numerous commercial and government customers.

As a company we believe in God, the free enterprise system and our employees. Based on these principles, our employees are committed to meeting customer requirements and maintaining customer satisfaction.

SECTION 4.0-QUALITY MANAGEMENT SYSTEM

4.1 General Requirements

Airtronics has established, documented, implemented and maintains a quality management system (QMS) with the intent to continually improve its effectiveness, in conformance with requirements of AS9100 Rev C International Standard which includes all the requirements of ISO 9001-2008. The QMS addresses customer and applicable statutory and regulatory QMS requirements.

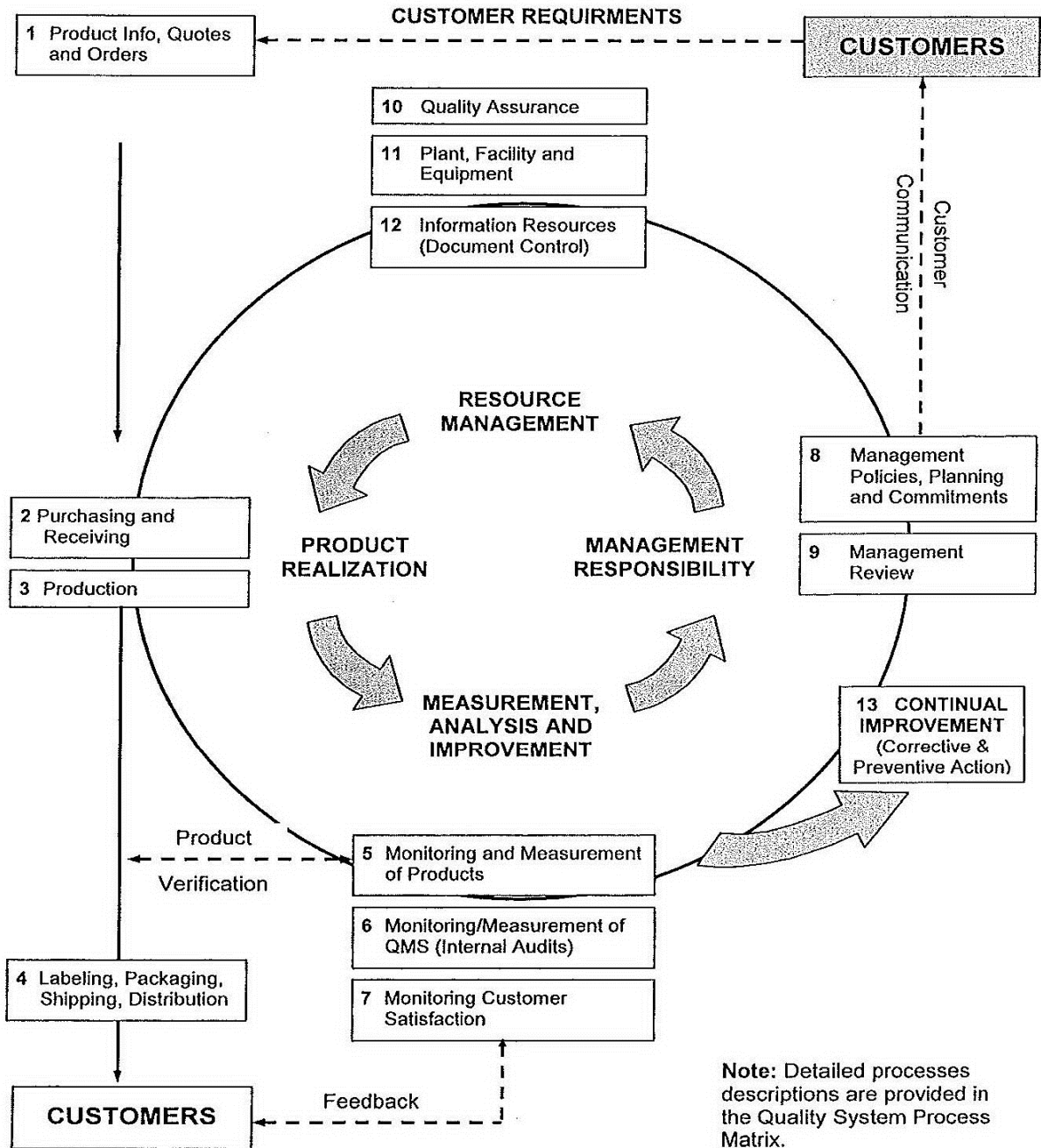
Airtronics QMS includes:

- The processes needed for the quality management system are determined and identified in this quality manual and in associated operational procedures and work instructions.
- The documentation defines these quality system processes and their sequence and interaction. Reference the quality system process map on the following page which represents how they apply throughout our organization.
- Our quality system documentation defines criteria and methods needed to ensure that the operation and control of quality system processes are effective.
- Management provides resources and information requirements necessary to support the operation, monitoring of quality system processes.
- Where applicable monitoring, measurement and analysis of these processes is performed.

Necessary actions to achieve planned results and continuous improvement are taken, when appropriate.

When processes that affect product conformity are outsourced, special controls are implemented to ensure that these processes meet specified requirements.

QUALITY SYSTEM PROCESS MAP



4.2 Documentation Requirements

Airtronics, Inc. quality system documentation comprises the following types of documents:

- Quality manual (including a documented quality policy)
- Documented statements of quality objectives
- Operational procedures
- Work instructions;
- Standards and other technical reference materials;
- Customer engineering documents;
- Product realization and control plans.
- Records determined by Airtronics to be necessary to ensure the effective planning, operation and control of its processes.

Airtronics ensures that personnel have access to quality system documentation and are aware of relevant procedures

Note: Our QMS documents are maintained in various type of media, e.g. electronic, hard copy, etc.

4.2.2 **Quality Manual-** The top level document defining the overall quality management system is this Quality Manual. It includes:

- The scope of the quality system, including details of and justification for any exclusions.
- *Exclusions to the Quality Management System*
 - Section 7.3 Design and Development-Airtronics has no design activity that applies to the intent of the scope of this section.
- The documented procedures established for the QMS, or reference to them.
- Description of processes and the interrelation to the quality system.

4.2.3 ***Control of Documents***-Airtronics controls all documents that we have deemed necessary based on our quality management system.

Procedure QOP-42-02 (Control of Documents) defines the process and methods that we utilize to control documents, which includes.

- The approvals required to ensure accuracy prior to issue.
- The necessary review, update and re-approval of documents.
- Ensuring that changes and current revision status of documents is identified.
- Ensuring that relevant versions of applicable documents are available at points of use.
- Ensuring that documents remain legible and readily identifiable.
- Ensuring that documents of external origin that we determine to be necessary for the planning and operation of our QMS are identified and their distribution is controlled.
- Preventing 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 quality records*** –Quality-records are established as evidence of conformity to requirements and of the effective operation of our QMS.

Procedure QOP-42-03 (Control of Quality Records) defines our process and methods for the control of our records, which includes the controls required for identification, storage, protection, retrieval, retention and disposition of records.

Records are legible, readily identifiable and retrievable.

Records that are created by and/or retained by our suppliers are controlled in accordance with the procedure QOP-42-03 (Control of Quality Records) and QOP-74-02 (Purchasing).

SECTION 5 - MANAGEMENT RESPONSIBILITY



5.1 Management Commitment

Top management is committed to the development and implementation of our QMS and its continuous improvement and effectiveness as evidenced by:

- Establishment of our quality policy.
- Establishment of quality objectives.
- Conducting management reviews.
- Provision of resources.

5.2 Customer Focus

Top management ensures that customer requirements are determined and are met with the aim of enhancing customer satisfaction.

Product conformity and on-time delivery performance are measured and appropriate action is taken when planned results are not or will not be achieved.

5.3 Quality Policy

Our quality policy is stated in this quality manual. Top management ensures that the Airtronics established quality policy is:

- Appropriate to suit to Airtronics
- States our commitment to comply with the requirements and continuously improve the effectiveness of our QMS.
- Provides a framework for establishing and reviewing quality objectives.
- Communicated and understood within Airtronics.
- Reviewed for continuing suitability.

5.4 Planning

5.4.1 **Quality objectives**-We ensure that quality objectives required to meet our product requirements are established and at relevant functions and levels within our organization. They are measurable and consistent with our quality policy.

5.4.2 **Planning of our QMS**- We ensure that planning of our QMS meets the requirements of section 4.1 of the standard, including quality objectives and ensures that the integrity of the QMS is maintained when changes are made.

5.5 Responsibility, authority and communication

5.5.1 **Responsibilities and authorities**-are defined and communicated throughout our organization. (Reference the organizational chart in this manual).

Airtronics has appointed as the Quality Manager as the AS 9100 Management Representative.

5.5.2 **The Management Representative**- has the organizational freedom and unrestricted access to top management to resolve quality management issues.

Included, but not limited to his/her responsibilities are:

- To ensure that the quality management system is implemented, maintained and continually improved;
- Reporting to the Top Management on the performance of the quality system, including needs for improvement;
- Promoting awareness of customer requirements throughout the organization;

5.5.3 **Internal Communication**-Issues regarding the quality system are communicated internally through distribution of pertinent documents, meetings, training and awareness programs, and management reviews.

5.6 Management Review

Management review meeting is held at planned intervals. Representatives from various departments are required to attend as they are notified.

The purpose of management review meetings is to evaluate the suitability, adequacy and effectiveness of the quality system, Identify opportunities for improvement of the quality system, processes and products and to consider changes to the quality management system, to the quality policy and quality objectives.

Records are maintained of these meetings.

Procedure QOP-56-01 (Management Review) defines our management review process.

5.6.2 **Input**-into the management reviews consists of information and data related to quality performance of our organization. At a minimum, this includes:

- Results of audits.
- Customer feedback and complaints.
- Process performance and product conformance data.
- Review all preventive/corrective actions and its' effectiveness of the quality system,
- Changes that could affect the quality system,
- Follow-up actions from earlier management reviews,
- Recommendations for improvement.

5.6.3 **Output**-of the management review include any decisions and actions related to:

6.1 Improvement of the effectiveness of the QMS and its' processes.

6.2 Improvement of product related to customer requirements.

6.3 Resource needs.

Mission Statement

***TO ACHIEVE AND MAINTAIN 100% ON TIME DELIVERY
WITH THE HIGHEST LEVEL OF QUALITY.***

Quality Policy

Airtronics, Inc. is committed to meeting customer requirements and increasing customer satisfaction through continual improvement of its processes, services and the quality management system.

1. Authority

- 1.1 Quality policy is established and approved by the President of Airtronics. Any changes to the policy must be likewise approved by the President.

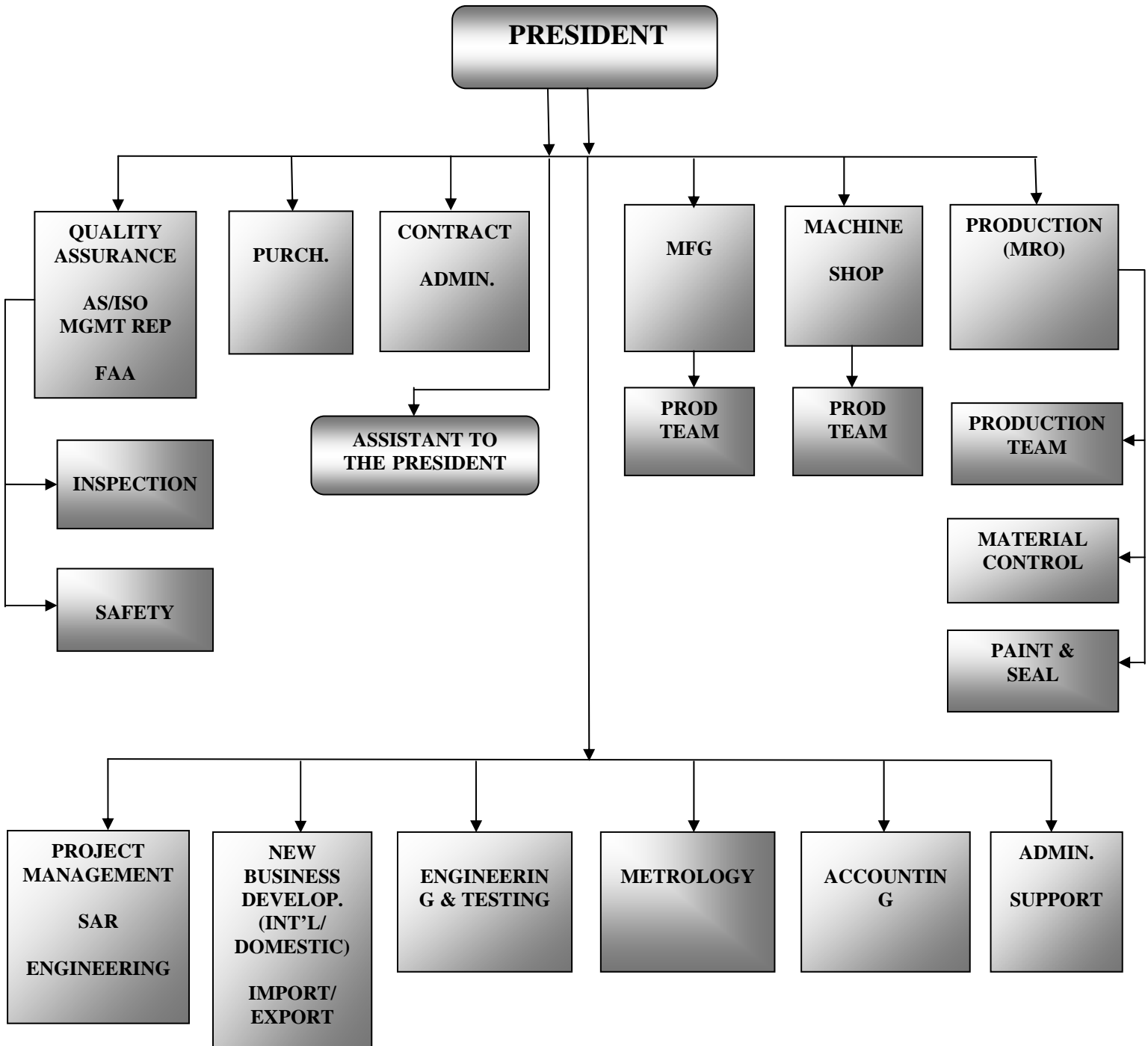
2. Role of the policy

- 2.1 The main role of the quality policy is to communicate the company's commitments and aspirations with regard to our QMS and to define our principal objectives.
- 2.2 The quality policy provides a framework for establishing and reviewing quality objectives, is communicated and understood within the organization and is reviewed for continuing suitability.

3. Communication

- 3.1 The quality policy is posted, in specified areas of the company, and its role is explained and discussed at the general orientation training provided to all employees.
 - 3.2 The quality policy is also communicated to customers, consumers and other interested parties.
-

AIRTRONICS ORGANIZATION CHART



SECTION 6 - RESOURCE MANAGEMENT

6.1 Provision of Resources

Top Management is committed to provide adequate resources for the implementation, maintenance, continuous improvement of the quality systems effectiveness and for enhancing customer satisfaction by meeting customer requirements.

6.2 Human Resources

6.2.1 Personnel assigned to perform work affecting conformity to product requirements are competent based their appropriate education, training, skills and experience.

6.2.2 *Competence, training and awareness*-When determining Competence, training and awareness, we:

- First determine the competency required of the specific employee
- When required, provide training or take other action to achieve the necessary competence.
- Evaluate the effectiveness of any actions taken.
- Ensure that our personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of quality objectives.
- Maintain appropriate records of education, training, skills and experience.

Procedure QOP-62-01(Training and Awareness) defines our process and methods for training and awareness.

6.3 Infrastructure

Suitable facilities, equipment, supporting services, and other necessary infrastructure are determined, provided and maintained, as required to achieve conformity to product requirements which includes as applicable;

- Buildings, workspace and associated utilities
- Process equipment (both hardware and software).
- Supporting services such as transport, communication or information services.

6.4 Work Environment

Airtronics provides a suitable work environment needed to achieve conformity to product requirements. Note: Factors that may affect the conformity of the product include physical, environmental and other factors such as noise, temperature, humidity, lighting or weather.

SECTION 7 - PRODUCT REALIZATION

7.1 Planning of Product Realization

Product realization plans are established and are consistent with the requirements of other processes of our quality management system.

Product realization plans are established in collaboration between various applicable departments within our organization, e.g., Production, Quality, Purchasing, Engineering, etc.

The output of our planning efforts are defined in various types of production documents, such as production work orders, control plans, operator instructions, process validation reports, etc.

Operating procedure, QOP-73-02 (Contract Review/Project Management/Risk Analysis defines our process/methods that we use when planning product realization.

When planning product realization, Airtronics determines the following as appropriate:

- Quality objectives and requirements for the product.
- The processes, documents and resources specific to our product are established.
- The required verification, validation, monitoring, measurement, inspection and test activities specific to our product and the criteria for acceptance is established.
- The records needed to provide evidence that the realization processes and resulting product meet customer requirements are established.
- Configuration management appropriate to our product is maintained.
- Resources are provided to support the use and maintenance of our product is provided.

7.1.1 **Project Management**-Airtronics plans and manages product realization in a structured and controlled manner to meet requirements at acceptable risk, within our resources and schedule constraints. The Contract Review/Project Management/Risk Analysis Procedure (QOP-73-02) defines the project management process.

7.1.2 **Risk Management**-Airtronics has established, implemented and maintains a process for managing risk to the achievement of applicable requirements that includes as appropriate to Airtronics and the product;

- Assigned responsibility risk management
- Defined criteria of risk (e.g., likelihood of consequences, risk acceptance)
- Identifying, implementing and management of actions to mitigate risks that exceed the defined risk acceptance criteria.
- Acceptance of risks remaining after implementation of mitigating actions.

Methods for determining risk during the evaluation of new and existing product are defined in the Contract Review/Project Management/Risk Analysis Procedure (QOP-73-02).

7.1.3 **Configuration Management**-Airtronics has established, implemented and maintains a configuration management process that is appropriate to the product. Planning for configuration management includes;

- Configuration identification
- Change control
- Configuration audit

The methods for the planning of configuration management during the evaluation of new and existing product are defined in the Contract Review/Project Management/Risk Analysis Procedure (QOP-73-02).

7.1.4 **Control of Work Transfers**-Airtronics has established, implemented and maintains a process to plan and control the temporary or permanent transfer of work (e.g., from one organization facility to another, from the organization to a supplier, from one supplier to another) and to verify the conformity of the work to requirements.

Work transfers as defined above are considered in the planning stages during the evaluation of new and existing product and are defined in the Contract Review/Project Management/Risk Analysis procedure (QOP-73-02).

7.2 Customer-related Processes

7.2.1 **Determination of requirements related to the product**-Product requirements are determined and reviewed by the appropriate representatives of various departments, i.e., Engineering, Production, Purchasing and Quality Assurance, depending on the nature and complexity of the product.

Determinations made include:

- The requirements specified by the customer, including requirements for delivery and post-delivery activities.
- Requirements not stated by the customer but necessary for specified intended use, where known.
- Statutory and regulatory requirements related to the product.
- Any additional requirements considered necessary determined by Airtronics.

7.2.2 *Review of requirements related to product*-is performed prior to our commitment to supply product to our customer.

Contracts and/orders we review the following to:

- Ensure product requirements are defined
- Ensure that contract or order requirements differing from those previously expressed are resolved.
- Ensure that Airtronics has the ability to meet the defined requirements
- Ensure special requirements of the product are determined.
- Ensure that risks have been identified (e.g., new technology, short delivery time frame)

Any incomplete or conflicting requirements are resolved with the customer before acceptance of the contract.

When there is no documented statement of requirement, Airtronics will confirm with the customer before acceptance of contract.

Contract changes are received and reviewed by the same function that is responsible for the review of the initial contract. Changes are communicated to functions within the organization that may be affected by the changes.

The process utilized by Airtronics is defined in Procedure, QOP-73-02 (Contract Review/Project Management/Risk Analysis)

7.2.3 *Customer Communication*-Airtronics determines and implements effective

arrangements for communicating with customers in relation to:

Product information-Top Management is responsible for developing the content and format for company's brochures, internet site and other methods of promotional and product information.

Inquiries, contracts and order handling, including amendments.-Top Management is responsible for receiving and reviewing customer inquiries and orders. Engineering, Production, Purchasing and Quality Assurance may be called to assist with the review of orders. Amendments are reviewed to verify that the new or modified requirements can be met and a confirmation of acceptance is sent back to the customer.

Customer feedback, including customer complaints-Top Management is responsible for receiving and processing customer feedback and complaints. Top Management and Quality Assurance decide how to respond to the customer and what corrective or preventive actions should be implemented internally.

Procedure QOP-82-01, Customer Feedback /Satisfaction, defines how we handle and respond to customer feedback and complaints.

7.3 Design and Development is currently an exclusion from our QMS

7.4 Purchasing

7.4.1 ***Purchasing Process***- Airtronics ensures that purchased product conforms to specified purchase order requirements. The type and extent of our control over our supplier base is dependent upon the effect of the product purchased on subsequent product realization or our final product.

Procedure QOP-74-02 (Purchasing) defines our purchasing process and includes as appropriate:

- Maintaining and approved vendor database that includes approval status and the scope of the approval.
- Periodically reviewing our supplier performance and utilizing the results to establish a basis for level of supplier control.
- Define the necessary actions when dealing with suppliers that do not meet our requirements.
- Ensure that where required we and all our suppliers use customer-approved special

process sources.

- Define the process, responsibilities and authority for the approval status decision, changes of the approval status and conditions for a controlled use of suppliers depending on their approval status.
- Determining and managing the risk, when selecting and using a supplier.

We take responsibility for all products purchased from suppliers, including suppliers defined by our customer.

We evaluate and select our suppliers based on their ability to supply product in accordance with our requirements.

The criteria for selection, evaluation and re-evaluation is established and defined in Procedure QOP-74-02 (Purchasing)

The records of the results of any evaluation and re-evaluations are maintained.

7.4.2 ***Purchasing Information***-Airtronics describes the product and all the requirements for the product to be purchased in purchase orders and applicable documentation.

Procedure QOP-74-02 (Purchasing) defines the purchasing information required and includes where appropriate:

- Requirements for approval of the product, procedures, and equipment.
- Requirements for the qualification of personnel.
- Quality management system requirements.
- Identification and revision status of specifications, drawings, process requirements, inspection/verification instructions and other relevant technical data.
- Requirements for design, test, inspection, verification (including production process verification), use of statistical techniques for product acceptance, and related instructions for acceptance by Airtronics and as applicable critical items, including key characteristics.
- Requirements for test specimens (e.g., production method, number, storage conditions) for design approval, inspection/verification, investigation or auditing.
- Requirements regarding the need for supplier to;

- Notify Airtronics of nonconforming product
- Obtain Airtronics approval for nonconforming product disposition
- Notify Airtronics of changes in product and/or processes, changes of suppliers, changes of manufacturing facility location when required, obtain Airtronics approval.
- Flow down to their supply chain any applicable requirements including our customer requirements.
- Records retention requirements.
- Suppliers shall provide Airtronics, our customers, and regulatory authorities, right of access to all applicable areas of all facility locations, at any level of the supply chain involved in the order and to all applicable records.

The adequacy of specified purchasing requirements is ensured prior to communication with our suppliers.

7.4.3 *Verification of purchased product* -Airtronics has established and implemented inspections and other necessary activities for ensuring that purchased products meet our specified purchase order requirements.

Procedure QOP-74-02 (Purchasing) defines our process for verification of purchased product)

Methods for recall and replacement for purchased product that is released pending completion of all required activities are in place. Note: This will apply only if product is subsequently found that product does not meet requirements.

When delegation has been given to suppliers for verification activities, Airtronics will define the specific authority given and maintain a log of suppliers with such delegation.

When Airtronics and/or our customer intend to perform verification activities at the supplier facility, Purchasing will ensure that the information on the purchasing document includes our intended verification arrangements and method of product release.

7.5 Production and Service Provision

7.5.1 *Control of Production and Service*-Airtronics plans and carries out production and

service under controlled conditions, which include as applicable:

- Availability of the information that describes the characteristics of the product.
- Availability of work instructions, as necessary.
- The use of suitable equipment.
- Availability and use of monitoring and measurement equipment
- Implementation of monitoring and measurement Implementation of product release, delivery and post delivery activities.
- Accountability for all product during production (e.g., parts, quantities, split orders, nonconforming product).
- Evidence that all production and inspection / verification operations have been completed as planned, or as otherwise documented and authorized.
- Provision for the prevention, detection, and removal of foreign objects.
- Monitoring and control of utilities and supplies (e.g., water, compressed air, electricity, chemical products) to the extent they affect conformity to product requirements
- Criteria for workmanship, clarified in the clearest practical way (e.g., written standards, representative samples, illustrations).

The following is considered when planning of production and service:

Establishment, implementation and maintaining appropriate process controls to manage critical characteristics, including where key characteristics have been identified.

When applicable, the design, manufacture and use of tooling used for variable data measurements.

Identification of verification points, where in-process verification of conformance cannot be performed at a later stage of product realization.

Production and process information required is communicated through the work order or is included in technical manuals and associated documentation.

The Work Order/Process Control processes are defined in Procedure QOP-75-01 (Production Control).

7.5.1.1 *Production Process Verification (First Article)*



Airtronics performs production process verification of new parts or assemblies to verify the production process, production documentation and tooling are capable of producing parts and assemblies that meet requirements.

When changes affecting processes, production equipment, tools, or software programs occur, a new first article is performed.

Production process verification, including changes to PPV is defined in Procedure AOP-75-03, Production Process Verification.

7.5.1.2 Control of Production Processes Changes

Personnel authorized to make production process changes is identified.

When changes are made affecting processes, production equipment, tools, or software programs, they are controlled and documented.

The results of changes made to production processes are assessed to confirm that the desired effect has been achieved without adverse effects to product conformity.

The Work Order/Process Control processes are defined in Procedure QOP-75-01 (Production Control).

7.5.1.3 Control of Production Equipment, Tools and Software Programs

Production equipment, tools and software programs used to automate and control/monitor product realization processes is validated prior to release for production and are be maintained.

Production equipment that is in storage is periodically checked for condition and to ensure preservation.

7.5.1.5 Post Delivery Support

Airtronics provides post-delivery support as applicable per contract requirements.

All in-house service activities are within the scope of our quality system and handled according to our documented procedures

The support provided may include:

- Collection and analysis of in-service data
- Actions to be taken, including investigation and reporting, when problems are detected after delivery.

- Control and updating of technical documentation.
- Approval, control and use of repair schemes.
- Airtronics does not perform service activities outside of the facility.

7.5.2 Validation of Processes for Production and Service-Processes where the resulting output cannot be verified by subsequent monitoring or measurement (Special Processes) and as a consequence deficiencies become apparent only after the product is in use or the service has been delivered.

Airtronics establishes arrangements for identifying, defining the criteria for review and approval of the processes, approval of equipment and qualification of personnel, use of specific methods and procedures, requirements for records and revalidation.

7.5.3 Identification and Traceability-Where appropriate, we identify our product by suitable means throughout the product realization. We maintain the identification of the configuration of the product in order to identify and difference between the actual and agreed upon configurations. Product is identified as to its' monitoring and measurement status/requirements. We have established as appropriate, acceptance media, e.g., stamps AOP-82-06 (Quality Stamp Control), electronic signatures, passwords, etc. and are controlled.

Where traceability is a requirement, the unique identification of products is controlled and records are maintained. Traceability

Identification and traceability of product is defined in procedure QOP-75-03 (Product Identification and Traceability).

7.5.4 Customer Property-Airtronics exercises care with customer property while it is in our control or being used by Airtronics. Customer property that will be used or incorporated into the product is identified, verified, protected and safeguarded. Customer property that is lost, damaged or otherwise found to be unsuitable for use will be reported to the appropriate customer and records maintained.

Customer property can include intellectual property and personal data.

Procedures are QOP-75-03 (Product Identification and Traceability), and QOP-75-04 (Product Handling and Preservation) further define our process for handling customer property.

Handling of government property is defined in procedure QA-0703 (Government Property)

7.5.5 Preservation of Product-Production is responsible for ensuring preservation of product during internal processing and delivery to it's destination in order to maintain conformity to requirements. Preservation includes, as applicable, identification, handling, packaging, storage and protection. This includes preservation of constituent parts of a product.

When applicable in accordance with product specification and applicable statutory and regulatory requirement, provisions will include:

- Cleaning
- Prevention, detection and removal of foreign objects.
- Special handling for sensitive products.
- Marking and labeling, including safety warnings
- Shelf life control and stock rotation.
- Special handling for hazardous materials

Procedures QOP-75-04 (Product Handling and Preservation), QOP-75-06 (Packaging, Labeling and Shipping) define the processes and methods we utilize for product preservation.

7.6 Control of Monitoring and Measuring Equipment-Airtronics determines the monitoring and measuring that is required, then makes a determination on what equipment is needed to provide evidence of conformity of product requirements.

Procedure QOP-76-01 (Control of Monitoring and Measurement of Equipment) defines the process and methods utilized to control monitoring and measuring equipment.

We maintain a database that defines the process employed for their calibration/verification, including details of equipment type, unique identification, location, frequency of checks, check method and acceptance criteria.

We have established processes to ensure that monitoring and measurement is implemented and consistent with our measurement requirements.

We ensure that environmental conditions are suitable for the calibration, inspection, measurement and testing being performed.

When necessary to ensure valid results our measuring equipment is:

- Calibrated/verified at specified intervals, or prior to use against measurement standards traceable to international or national measurement standards. Where no such standard exist, the basis used for calibration or verification is recorded.
- Adjusted or re-adjusted as necessary.
- Identified in order to determine its' calibration status.
- Safeguarded from adjustments that would invalidate the measurement result.
- Protected from damage and deterioration during handling, maintenance and storage.

A recall method is in place to ensure equipment requiring calibration is performed when required.

When equipment is found not to conform to requirements, steps are taken to assess the validity of any previous measurement results and if necessary take appropriate action on the equipment and product affected.

When computer software is used for monitoring and measurement of specified requirements, the ability of the computer software to satisfy the intended application is confirmed prior to initial use and re-confirmed as necessary.

SECTION 8 - MEASUREMENT, ANALYSIS AND IMPROVEMENT

- 8.1 **General-**Airtronics defines the process for monitoring, measurement, analysis and improvement processes needed to:
-

- Demonstrate conformity to product requirements
- Ensure conformity of the quality management system
- To continually improve the effectiveness of the quality management system.

These processes are defined in specifications and drawings, production work orders, inspection and testing procedures and process control procedures. These activities are further defined in operational procedures referenced throughout this section.

When required by customer and/or deemed necessary by management the use of applicable methods such as statistical techniques and the extent of their use, are considered during the planning phases.

8.2 ***Monitoring and Measurement***

8.2.1 ***Customer Satisfaction***-As part of the measurement of the performance of the quality management system, Airtronics monitors the information relating to customer perception as to whether we have met customer requirements.

The process and methods used by Airtronics is defined in operational procedure, QOP-82-01 (Customer Feedback / Satisfaction).

8.2.2 ***Internal Audits***-Airtronics, Inc. conducts internal audits at planned intervals to determine whether the quality management system conforms to planned arrangements to the requirements of our AS 9100 QMS and that it is effectively implemented and maintained.

Our audit program takes into consideration the status and importance of our processes and areas that are to be audited as well as the results of previous audits. Auditors do not audit their own work.

Records of audits performed and the results are maintained.

Management ensures that necessary corrections and corrective actions are taken without undue delay to eliminate detected non-conformities and their causes. Follow up activities include as applicable, verification of the actions and the reporting of verification results.

Operational procedure, QOP-82-02 (Internal Auditing) defines the process we utilize for internal auditing.

8.2.3 ***Monitoring and Measurement of Processes***-Quality system processes are monitored by variety of approaches and techniques, as appropriate for a particular process in relation to the impact on the conformity to the product requirements and the

effectiveness of the quality management system. These include:

- Conducting internal audits of the quality system (QOP-82-02-Internal Audits)
- Monitoring trends in corrective and preventive action requests-(QOP-85-02-Corective and Preventive Action)
- Analyzing product conformity and other quality performance data and trends-(QOP-56-01-Management Review)
- Measuring and monitoring customer satisfaction (QOP-82-01-Customer Satisfaction)

In the event of process non-conformity, Airtronics will:

- Take appropriate action to correct the nonconformance process.
- Evaluate whether the process nonconformity has resulted in product nonconformity
- Determine if the process nonconformity is limited to a specific case or whether it could have affected other processes or products.
- Identify and control nonconforming product in accordance with Operational Procedure QOP-83-01

8.2.4 ***Monitoring and Measurement of Product***-Airtronics monitors and measures the characteristics of product(s) to verify that product requirements have been met. They are carried out at appropriate stages of our product realization process in accordance with planned arrangements. Evidence of conformity with the acceptance criteria is maintained.

Inspection and testing program for product is defined in various types of documents, such as product drawings and specifications, production work orders, purchasing documents, inspection and testing procedures, etc.

Measurement requirements for product acceptance include;

- Criteria for acceptance and/or rejection
- Identify where in the sequence, measurement and testing are performed.
- Required records of the measurement results (at a minimum, indication of

acceptance or rejection).

- Any specific measurement instruments associated with their use.

When critical items or key characteristics have been identified, they are monitored and controlled.

When Airtronics utilizes sampling inspection as a means of product acceptance, the sampling plan is justified on the basis of recognized statistical principles and appropriate for (i.e., match the sampling plan to the criticalness of the product and its process capability)

When defects are discovered during maintenance that are outside the scope of the maintenance contract, they are processed in accordance with customer and applicable authority requirements.

If product is released for maintenance use pending completion of all required measurement and monitoring activities, it will be identified and recorded to allow recall and replacement if it is subsequently found that it does not meet product requirements.

Records are kept that indicate the authorizing personnel for release of product for shipment, including, when applicable, records that demonstrate product qualification.

Product is not released to the customer until all planned arrangements have been satisfactorily completed, unless authorized by the management and/or the customer.

All documents that are required to accompany the product are present at delivery

Procedure QOP-74-02 (Purchasing), QOP-82-04 (In-process Inspections), QOP-82-05 (Final Inspection) define the processes and methods utilized for monitoring and measurement of product.

- 8.3 ***Control of Nonconforming Product***-Airtronics ensures that product that does not conform to product requirements is identified and controlled to prevent its unintended use or delivery.

Operational procedure QOP-83-01 Control of Non-conforming Product defines the controls and related responsibilities and authorities relating to nonconforming product including product returned by the customer, worn product, counterfeit and/or

suspected unapproved parts.

Airtronics controls nonconforming material by one or more of the following methods;

- Taking action to eliminate the detected nonconformity.
- Authorizing its use, release or acceptance under concession by a relevant authority and, where applicable by the customer.
- Taking action to preclude its original intended use or application
- Taking action appropriate to the effects, or potential effects of the nonconformity when nonconforming product is detected after delivery or use has started.
- Ensuring our nonconforming product control process allows for timely reporting of delivered nonconforming product. This may include notifying suppliers, internal organizations, customers, distributors and regulatory authorities.
- Taking actions necessary to contain the effect of the nonconformity on other processes or products.
- When product nonconformity is detected that may affect reliability or safety after delivery or use has started, customers are informed and instructed what to do with the product.

Disposition decisions for nonconforming product are defined in the referenced procedure.(QOP-83-01- Control of Nonconforming Product). The individuals making these decisions are qualified to make these decisions based on their professional experience, education, and background.

Repaired or reworked products are re-inspected in accordance with applicable procedures.

Nonconforming product/material, including actions taken and concessions obtained, are documented using a nonconformity report which is maintained by quality assurance.

- 8.4 ***Analysis of Data***-Airtronics Inc. collects and reviews information/data required for evaluating the suitability and effectiveness of the quality system and for identifying opportunities for continual improvement.

Quality Assurance is responsible for coordinating these activities, and for reporting conclusions and trends to the Top Management. This is usually done within the framework of management reviews of the quality system, in accordance with

Operational Procedure QOP-56-01, Management Review.

Following categories of information are reviewed on an ongoing basis by their respective departments. The information is reviewed and evaluated by the departments to determine, if findings should be presented to the management review team. Information that may be presented would include:

- Customer satisfaction
- Conformity to product requirements
- Characteristics and trends of processes and products including opportunities for preventive action.
- Supplier performance
- Human factors events

8.5 *Improvement*

8.5.1 *Continual Improvement*-Airtronics strives to continually improve the effectiveness of the quality management system through the use of our quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review.

QOP-85-01 (Continual Improvement) defines the methods utilized for facilitating activities regarding continuous improvement of the quality management system.

Where appropriate, improvement projects may be also initiated from lessons learned, problem resolutions, bench marking of best practices, management directives, such as policy statements, announcements, memoranda, and so forth. Continuous improvements activities are monitored and the results are evaluated for effectiveness.

8.5.2 *Corrective and Preventive Action*-Airtronics has implemented a documented procedure (QOP-85-02-Corrective and Preventive Action) that define the process we take to eliminate the causes of non-conformities in order to prevent recurrence. (Corrective) and to determine action to eliminate the causes of potential non-conformities in order to prevent their occurrence (Preventive)

The actions are appropriate to the effects of the non-conformities encountered (Corrective) and appropriate to the effects of the potential problem (Preventive)

The procedure defines the **corrective** action requirements for:

- Reviewing nonconformities (including customer complaints)

- Determining 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.
- Reviewing the effectiveness of the corrective action taken.
- Flowing down corrective action requirements to a supplier when it is determined that the supplier is responsible for the nonconformity.
- Specific actions where timely and/or effective corrective actions are not achieved.
- Determine if additional nonconforming product exists based on the causes of the nonconformities and taking further action when required.
- Evaluating the need for action taken based on Human Factors to ensure that non-conformities do not recur.

8.5.2 **Preventive Action**-The procedure defines the **preventive** action requirements for:

- Determining potential nonconformities and their causes. (risk analysis)
- Evaluating the need for action to prevent occurrence of nonconformities.
- Determining and implementing action needed.
- Records of results of action taken.
- Reviewing the effectiveness of the preventive action taken.
- Evaluating the need for action taken based on Human Factors to prevent occurrence of non-conformities.