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# QUALITY MANAGEMENT SYSTEMS MANUAL

AS 9100 Rev C / ISO 9001-2008

**UNCONTROLLED COPY\_  
ISSUE DATE**

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**REVISION DATE:30 APRIL 2010**

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GENERAL
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### RECORD OF REVISIONS

DATE	SECTION	REVISION
08/07/02	5.1	Distinguish between Top Management and Executive team. Change Quality Manager to Quality Assurance Manager.
06/24/02	5.4	Changed ISO 9001 to ISO 9001-2000. Added Hyperlinks
06/24/02	5.5	Added responsibility to Management Representative in absence of President, added A. Smith to Org Chart in Acc/Contracts, Chg ISO 9001 to ISO 9001-2000, QOP 31-01 to QOP 32-01, Added QOP 32-01 & QOP 12-01 to associated documents, added hyperlinks
06/24/02	5.6	Added para.2.1 "the effectiveness of the Preventive/Corrective Action of the Quality System, Chg Quality Rep. To Quality Assurance Manager and added hyperlinks.
08/13/02	6.2	Chg para. 3.1 "The effectiveness of training (QOP 32-01) is evaluated as appropriate".
08/30/02	6.4	Rewrote the scope para. 2.0 to include the department input of data at the management review meeting. Added department responsibility to para. 2.1 thru 2.5.
09/06/02	7.2	Added para. 1.4.2.
09/20/02	8.5	Corrected para. 2.4.1, deleted 52.5 Continual etc.
10/31/02	7.3	Incorporated Manufacturing Control to QM
11/05/02	0.3	Deleted Design Control from Exclusions
03/21/03	QM	Incorporated C&L Airtronics into QM with (*Airtronics)

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04/14/03	5.5	Added Accounting & Contracts to Para 1.2.
08/21/03	8.1	Deleted reference to QOP 52-03.
09/14/03	5.5	Added FAA Accountable Manager to ISO Management Rep. to ORG Chart.
10/02/03	7.2	Deleted contract reviews are recorded.
04/23/04	6.2	Deleted personnel qualification records maintained.
05/11/04	5.5	Added FAA Accountable to President. Removed from ISO Representative(Org Chart).
8/09/04	7.2	Changed Sales to Top Management and revised the process to Airtronics method.
8/09/04	5.5	Changed Quality Manager and added Tech Support Coordinator.
11/10/04	8.2	Added "government sources" to customer satisfaction.
4/07/05	5.5	Re-identified the responsibilities of the Tech Support Coordinator
6/01/05	5.5	Changed Quality Manager in org chart
7/07/05	5.2	Corrected form number on paragraph 4.1
7/21/05	QAM	Deleted all references to C & L in QA Manual.
4/27/06	5.5	Revised Organizational Chart to adjust for employment changes.
10/17/06	5.5	Added Administration support

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10/12/07	8.2	Incorporated Human Resources into Quality manual as Para 3.2 and moved the training process to Para 3.2.1.
4/16/08	7.3	Revised para 4.3 to initiate manufacturing process.
8/1/08		QAM Cover Page Revised to Reflect change in facility location
1/21/09	0.3	Added exclusions for para. 4.3 & 4.5.
	5.5	Added job descriptions to Organization & Communications.
	5.6	
09/28/09	1.1	Added Quality System Process Map
10/21/09	0.1	Revised index section numbers to agree with AS9100/ISO9001-2008 format.
10/26/09	4.0-8.0	<i>Revised all sections of quality manual to include requirements of ISO 9001-2008 and AS 9100. Rev C. Renumbered to reflect AS 9100 numbering scheme. The revision of the quality manual is now controlled with the revision date only. These changes also constitute a review of each quality system document for continuing suitability and effectiveness..</i>
3/3/10	5.3	REVISED SECTION BY ADDING MISSION STATEMENT TO AGREE WITH AIRTRONICS WEB SITE

GENERAL			
Section 0.2	Section Rev.: 3.0	Rev. Date: 10/21/09	Section Page 1
<b>Introduction</b>			

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

The quality system operates within the international standard [AS 9100 Rev C](#), [ISO 9001-2008](#), and [Federal Aviation Regulations Part 145](#)

The manual is divided into four sections modeled on the sectional organization of the [AS 9100 Rev C and ISO 9001-2008](#)) standards. *Throughout all sections of this manual and Operational Procedures will be referred to as AS 9100.* Sections are further subdivided into several subsections representing main quality system elements or activities. Each subsection starts with a general policy statement expressing the commitment to implement the basic principles of the pertinent quality system element or activity. The general policy statement is followed by more specific procedural policies outlining how the general policy is implemented, and referencing applicable operational procedures.

The purpose of this manual is to define and describe the quality system, to define authorities and responsibilities of the management personnel involved in the operation of the system, and to provide general procedures 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 and to inform them what specific controls are implemented at *Airtronics, Inc.* to assure quality.

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## Introduction

### Company Background

Airtronics, Inc. was founded in 1975 by Jim Smith and one other minority stock holder. Mr Smith obtained full ownership in 1985.

Airtronics has experienced steady growth since startup. In 1997 Brad Smith, the son of the founder was appointed President and General Manager handling all management functions.

Airtronics has become known for its quality and expertise in the aerospace industry.

Airtronics Inc. holds the following Repair Station ratings through the Federal Aviation Administration:

RADIO-Class I, II, III

INSTRUMENT-Class I, II, III, IV

ACCESSORY-Class I, II, III

SPECIALIZED SERVICES - Non-Destructive Inspection

Magnetic Particle Inspection - Mil-I-6868E

Dye Penetrant Inspection - Mil-I-6866E

Airtronics, for over thirty five years, has operated a quality system in accordance with Federal Aviation Regulations Part 145, Mil-I-45208A, Mil-Std-45662 and parts of Mil-Q-9858 which has allowed it to maintain an ongoing relationship with the all branches of the United States Military, the FAA, Lockheed, Boeing, Northrop Grumman Aerospace, Sikorsky Aircraft Company, and Kaman Aerospace.

As a Company we believe in God, the free enterprise system, our employees, and the future of the American way of life. With these beliefs, hard work and our commitment to quality the employees of this company are striving to make it second to none in our fields of endeavor.

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Section 0.3

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**Exclusions****GENERAL POLICY**

*The quality management system shall be relevant to the nature of our organization and products, and to customer and regulatory requirements. For this reason, those requirements of [AS9100 Rev C](#) that do not apply are excluded from the scope of our quality system.*

**PROCEDURAL POLICIES**

Following rules and criteria are used for excluding irrelevant requirements:

1. An [AS9100 Rev C](#) requirement may be excluded only when both of the following conditions are met:
  - The requirement must be within [AS9100 REV C](#), Clause 7, Product Realization.
  - The exclusion may not affect our ability, nor absolve us from the responsibility, to provide product that meets customer and applicable regulatory requirements.
2. Quality Assurance Manager is responsible for identifying those requirements of [AS 9100 Rev C](#) that do not apply to our organization or products, and to propose exclusions of such requirements from the scope of the quality system.
3. Top Management has the responsibility and authority for evaluating whether the proposed exclusions are appropriate, and for approving them. Evaluation and approval of exclusions are conducted within the framework of management reviews of the quality system (refer to Operational Procedure [QOP-56-01](#), Management Review).
4. Any exclusions taken are documented in this section of the quality manual. The excluded requirements are precisely identified with reference to specific clauses and/or statements in the standard. There is also a brief justification why the exclusion is taken and why it is appropriate.

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## Exclusions

### EXCLUSIONS

1. **7.3** Design and Development.

Airtronics provides a repair and overhaul service.

2. **7.5** Product Realization

**7.5.1.5** Control of Production and service Provision.

Airtronics does not perform any servicing outside of plant.

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## QUALITY MANAGEMENT SYSTEM

Section 4.1

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**General Requirements****GENERAL POLICY**

*Airtronics, Inc. is committed to establish, document, implement and maintain a quality management system, and continually improve its effectiveness, in conformance with requirements of [AS9100 Rev C International Standard](#) which includes all the requirements of [ISO 9001-2008](#).*

**PROCEDURAL POLICIES****1. Quality system processes**

- 1.1 Determine the processes needed for the quality management system are 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, and instructs on how to implement and apply them throughout the organization. For visual representation of interaction throughout the Quality Management System see next page for Quality System Process Map.
- 1.2 Quality system documentation also defines criteria and methods needed to ensure that the operation and control of quality system processes are effective. This usually includes assignment of responsibilities and allocation of resources for the process, instructions on how to carry out (or operate) the process, and definition of methods for monitoring and/or measuring the effectiveness of the process.
- 1.3 [Airtronics QMS addresses customer and applicable statutory and regulatory QMS requirements.](#)
- 1.4 Operational Procedure [QOP-42-01](#), Quality System Documentation, explains in more detail how quality system processes are defined and documented.

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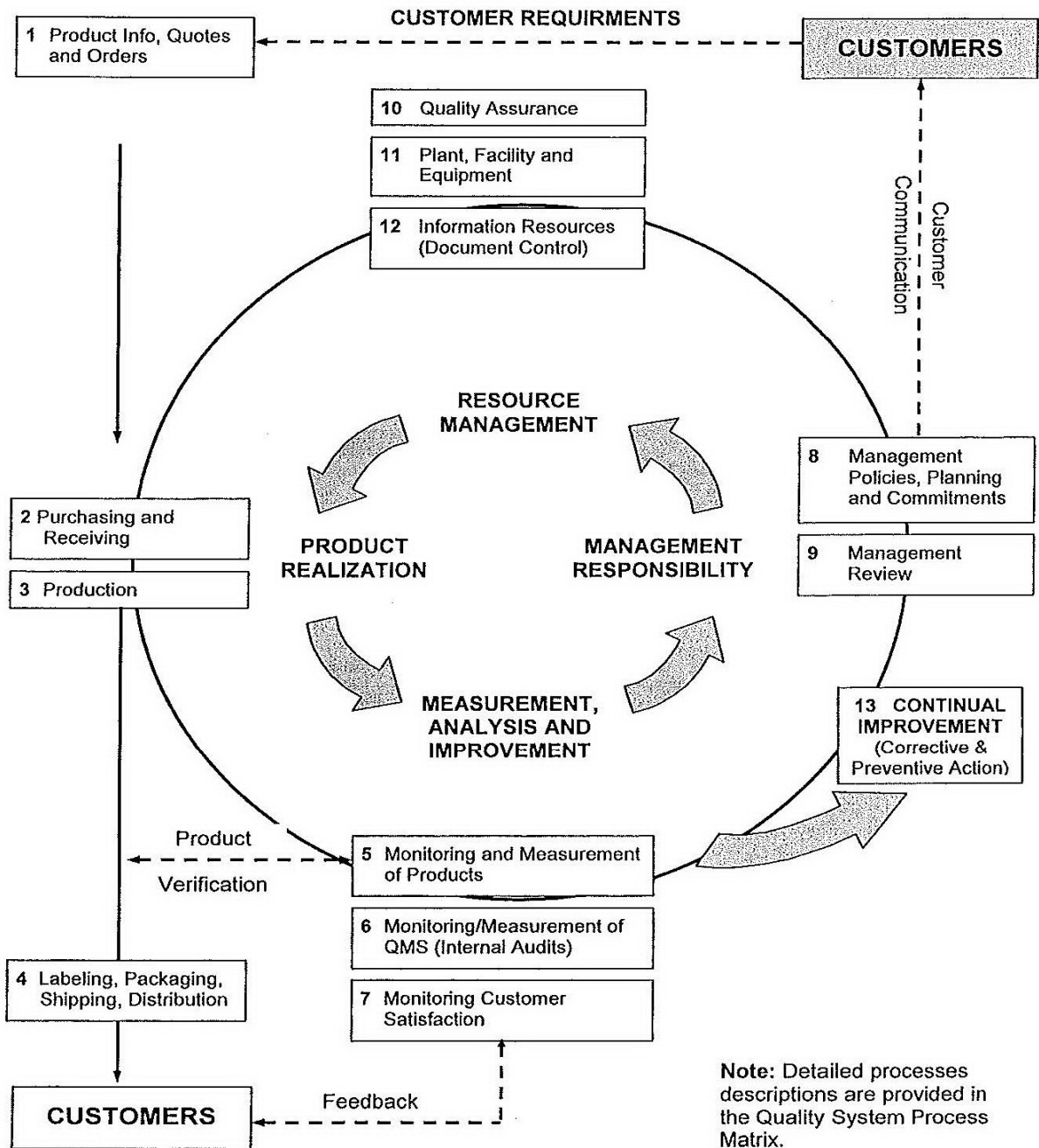


## General Requirements

### 2. Resources and information

- 2.1 Quality Assurance Manager is responsible for determining resource and information requirements necessary to support the operation, monitoring of quality system processes and for communicating these requirements to the Top Management. The Top Management is responsible for ensuring the availability of necessary resources and information. Section 7.1 of this quality manual, Provision of Resources, explains in more detail how resource requirements are identified and satisfied.

**QUALITY SYSTEM PROCESS MAP**



## General Requirements

### 3. Monitoring and measurement

- 3.1 The performance of quality system processes is systematically monitored and/or measured. This is to ensure their effectiveness and identify opportunities for improvement.
- 3.2 The performance of product realization processes is usually monitored by measuring process parameters and/or product characteristics resulting from the process; and through the program of inspections and tests applied to the product. The performance of processes required for quality management is usually monitored through internal quality audits. The overall performance of the quality system is monitored by measuring customer satisfaction.
- 3.3 Monitoring and measuring activities are defined in Sections 8.1 and 8.2 of this quality manual, and in the corresponding operational procedures.

### 4. Conformance and continual improvement

- 4.1 Quality management system processes are reviewed by Management Staff to identify any possible failures or breakdowns, as well as opportunities for improvement. Actions necessary to address actual or potential problems and to improve the quality system are implemented through corrective and preventive actions and management improvement projects. Sections 5.6 and 8.5 of this quality manual and the corresponding operational procedures define how management reviews corrective/preventive actions used to ensure conformance and improvement.

### 5. Outsourced processes

- 5.1 When processes that affect product conformity are outsourced, special controls are implemented to ensure that these processes meet specified requirements. Such controls may include, as appropriate: evaluation of suppliers; assessment of supplier realization processes and quality system; requirements for inspection, testing or other records demonstrating product conformity. Note: *Ensuring control over outsourced processes does not absolve Airtronics of the responsibility of conformity to all customer, statutory and regulatory requirements.* Section 7.4 of this quality manual and the corresponding operational procedures define such purchasing control system.

## General Requirements

### ASSOCIATED DOCUMENTS

- Quality Manual: All sections
- Operational Procedure [QOP-42-01](#): Quality System Documentation

**Documentation and Records****GENERAL POLICY**

*Scope of the quality system documentation is defined. Establishment and revision of documents, and their distribution, is controlled. New documents and revisions are reviewed and approved prior to issue; and are identified with respect to their revision level. Appropriate documents are available at locations where they are used. Obsolete documents are removed from points of use. Documents of external origin are identified and their distribution is controlled. Our documentation may be in various formats or medium.*

*Quality records are identified to facilitate their retrieval, and are stored in a suitable environment to minimize deterioration. Quality records are retained for a period of time required by contract.*

**PROCEDURAL POLICIES****1. Scope**

1.1 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.

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## Documentation and Records

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

Purpose, scope, and responsibility for controlling various types of documents are defined in Operational Procedure [QOP-42-01](#), Quality System Documentation.

### 2. Quality Manual

2.1 The top level document defining the overall quality management system is the Quality Manual. It includes:

- The scope of the quality system, including details of and justification for any exclusions (refer to Section 0.3);
- Description of processes and the interrelation to the quality system.

### 3. Document control

3.1 Airtronics, Inc. is gradually transitioning from paper to electronic documentation. As this transition progresses, new categories of documents are transferred from paper to electronic document control system. Both systems are currently used, and are defined in Procedure [QOP-42-02](#), Control of Documents.

3.2 New documents and document changes may be initiated by authorized personnel in the organization. The authorized functions and the rules governing the issue of documents are defined in procedures [QOP-42-01](#), Quality System Documentation, and [QOP-42-02](#), Control of Documents. All documents are reviewed and approved prior to issue.

3.3 A paper document is officially issued for use when it is approved by authorized personnel. An electronic document is issued by being placed in a public directory accessible from the network.

3.4 Documents are distributed to personnel and locations where they are used; when documents display a distribution list. Electronic documents are available on the network and are accessible at relevant terminals and computers. Document placement is regulated by Procedure [QOP-42-02](#).

3.5 Obsolete documents are removed from points of use. Retained masters or copies of obsolete documents are properly marked and are separated from active documents. Obsolete electronic documents are removed from the general network access and, if retained, are stored in directories that are only accessible to authorized personnel.

## Documentation and Records

- 3.6 Document changes are reviewed and authorized by the same function that issued the original document. Revised documents are distributed with a change brief summarizing the changes. For electronic documents such list is not necessary, as only the latest issue and revision of a documents is available on the network.
- 3.7 All documents will be stored in dry and clean areas to ensure documents remain legible.
- 3.8 Documents of external origin that are determined to be necessary for the planning and operation of the quality system are identified and their distribution controlled.

### 4. Control of quality records

- 4.1 Quality records are established and maintained to provide evidence that:
- Materials, components, and production processes meet specified requirements;
  - Finished products conform to specifications;
  - The quality system is operated in accordance with documented procedures and that it is effective.

Where required, quality records also include traceability information.

Records created and/or retained by our suppliers are controlled. Reference [QOP 44-02, Purchasing](#).

- 4.2 Records are established by personnel performing the task, operation or activity; the results of which need to be recorded. Records are dated and identify the product, person or event to which they pertain.
- 4.3 Records are stored in Cabinets, binders, computer disks, and other storage media containing records.
- 4.4 Records are stored in dry and clean areas to ensure they remain legible. Electronic records are regularly backed up daily by Quality Assurance. Quality records and documents may not be stored in private desk drawers, unauthorized computer drives, or other obscure locations that are not generally known.
- 4.5 Retention periods for quality records are determined on contractual requirements.
- 4.6 All categories of quality records maintained by *Airtronics, Inc.* are listed in Operational Procedure [QOP-42-03](#), Control of Quality Records. The list identifies

## Documentation and Records

specific types of records for each category; their storage location and retention period.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-42-01](#): Quality System Documentation
- Operational Procedure [QOP-42-02](#): Control of Documents
- Operational Procedure [QOP-42-03](#): Control of Quality Records
- Operational Procedure [QOP-74-02](#) Purchasing

## MANAGEMENT RESPONSIBILITY

Section 5.1

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**Management Commitment****GENERAL POLICY**

*The Top Management is ultimately responsible for establishing, implementing, maintaining, and improving the quality system. Management commitment is demonstrated by communicating to the organization the importance of meeting requirements, establishing the quality policy, quality objectives, conducting management reviews of the quality system and ensuring the availability of necessary resources.*

**PROCEDURAL POLICIES****1. Top management**

- 1.1 For the purpose of administrating the quality management system, Airtronics, Inc. Top Management is the President. The Executive Team includes the Quality Assurance Manager and Representatives as defined in this manual in Section [5.5](#), Organization and Communication.

**2. Customer requirements**

- 2.1 Top Management must provide evidence of its commitment to the quality system by communicating to the organization the importance of meeting customer as well as statutory and regulatory requirements and ensuring quality objectives are established. Management representatives are responsible for implementing this commitment by promoting awareness of customer requirements throughout the organization. This responsibility of management representative is stipulated in Section [5.5](#), Organization and Communication.

**3. Customer Focus**

- 3.1 Airtronics top management ensures that customer requirements are determined and are met with the aim of enhancing customer satisfaction. Details are defined in operating procedures. (reference sections 7.2.1 and 8.2.1)
- 3.2.1 [Product conformity and on-time delivery performance are measured and appropriate action is taken when planned results are not or will not be achieved.](#)

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## Management Commitment

### 4. Quality policy and quality objectives

- 4.1 Top Management defines the purpose and objectives for the quality management system. They are documented and communicated in the form of quality policy and quality objectives. Processes for establishing the quality policy and quality objectives are defined in this manual in Section [5.3](#), Quality Policy, and Section [5.4](#), Quality System Planning.

### 5. Management review

- 5.1 Top Management periodically reviews the quality management system to ensure its continuing suitability, adequacy and effectiveness. The review evaluates current status and performance of the quality system and initiates actions for further improvement of the system. The process for conducting management reviews is defined in Section [5.6](#) of this manual and in Operational Procedure [QOP-56-01](#), Management Review.

### 6. Resources

- 6.1 Top Management will continue to perform management reviews of the effectiveness of the system and ensure availability of resources.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-56-01](#): Management Review

## MANAGEMENT RESPONSIBILITY

Section 5.2

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**Customer Focus****GENERAL POLICY**

*The principal objective of Airtronics, Inc. quality management system is to focus our organization on the customer and in particular, on customer satisfaction. The key to achieving high customer satisfaction is a good understanding of customer requirements and a capability to consistently fulfill these requirements.*

**PROCEDURAL POLICIES****1. Determining customer requirements**

- 1.1 Customer requirements are understood broadly to include all aspects of product offering and associated services, that are relevant to customer satisfaction.
- 1.2 Customer requirements are determined and verified through the process of order review. This process is defined in this manual in [Section 7.2](#), Customer-related Processes.

**2. Meeting customer requirements**

- 2.1 Nearly all processes and elements of the quality system are designed and implemented specifically to ensure that customer requirements are met. This starts with provision of required training, adequate infrastructure and suitable work environment (Section 6, Resource Management). Next follows planning, implementation of reliable and effective product realization processes (Section 7, Product Realization). And finally, activities related to product, process monitoring and verification (Section 8, Measurement, Analysis and Improvement).
- 2.2 Meeting of customer requirements is monitored and/or verified by variety of methods defined in Section 8.2, Monitoring and Measurement, and in associated operational procedures. Results of these verification activities are recorded to provide evidence of product conformity, as defined in Section 4.2, Documentation and Records.

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## Customer Focus

### 3. Customer satisfaction

- 3.1 Focusing on customer requirements, ensures that customers requirements are determined and are met with the aim of enhancing customer satisfaction. In fact, the level of customer satisfaction is used as a measure of the effectiveness of the whole quality system.
- 3.2 Specific methods for determining customer satisfaction are defined in quality manual Section 8.2 and in the associated operational procedure [QOP-82-01](#), Customer Satisfaction. This valuable information is reported and used as described in Section 5.6, Management Review.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-72-03](#): Customer Feedback and Complaints
- Operational Procedure [QOP-82-01](#): Customer Satisfaction
- Operational Procedure [QOP-56-01](#): Management Review

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<b>Quality Policy</b>			

**MISSION STATEMENT**

**To work hand in hand with our customers to establish a working solution to meet their needs.**

**GENERAL 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.**

**PROCEDURAL POLICIES**

- 1. Authority**
  - 1.1 Quality policy is established and approved by Top Management. Any changes to the policy must be likewise approved by Top Management.
- 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 quality, and to define principal objectives for the quality management system.
  - 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. The use of the policy to facilitate continual improvement is explained in Operational Procedure [QOP-85-01](#), Continual Improvement.

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## Quality Policy

### 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.

### 4. Review

- 4.1 The quality policy is periodically reviewed within the framework of management reviews of the quality system. This is to ensure its continual relevance and suitability. The process for reviewing the quality policy is defined in Operational Procedure [QOP-56-01](#), Management Review.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-56-01](#): Management Review
- Operational Procedure [QOP-85-01](#): Continual Improvement

## MANAGEMENT RESPONSIBILITY

Section 5.4

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**Quality System Planning****GENERAL POLICY**

*Quality objectives are established to support and implement the quality policy and continual improvement. Quality planning includes identification and determination of quality system processes (including any exclusions of [AS 9100 Rev C](#) requirements); priorities for continual improvement; resources needed to achieve quality objectives and to maintain and improve the quality system. Quality plans are periodically reviewed and updated to maintain the integrity of the quality system during organizational and other changes.*

**PROCEDURAL POLICIES****1. Quality objectives**

- 1.1 Quality objectives are established throughout the organization to implement the quality policy, to meet requirements for products and processes and to improve the quality system and quality performance.
- 1.2 Quality objectives define the direction and priorities for continual improvement. The use of quality objectives for facilitating continual improvement is explained in Operational Procedure [QOP-85-01](#), Continual Improvement.
- 1.3 Quality objectives are:
  - **Policy objectives:** These are principal, strategic objectives that apply to the whole organization. They are typically included in the quality policy itself or may be communicated in memoranda from the Top Management. Policy objectives are authorized by Top Management.
  - **Quality performance objectives:** These objectives set specific measurable targets for improving operational performance, to ensure product conformity and customer satisfaction. They apply to departments and functions having direct responsibility for activities that require improvement. Performance objectives are established, documented and monitored within the framework of management reviews of the quality system, in accordance with Operational Procedures [QOP-56-01](#), Management Review.

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## Quality System Planning

- **Product quality objectives:** These objectives pertain to improvement of products and associated services. Product objectives are established by Top Management. They can be documented in memoranda or minutes of meetings.
- **Quality system objectives:** These objectives pertain to improvement of quality system processes and performance. Quality system objectives are established, documented, and monitored within the framework of management reviews of the quality system, in accordance with Operational Procedure [QOP-56-01](#), Management Review.

### 2. Quality system planning

2.1 Quality system elements and processes are planned to ensure that the system is appropriate for its intended purpose and that it is effective and efficient. The purpose of the quality system is:

- To achieve the quality policy;
- To ensure and demonstrate our ability to provide consistently product that meets customer and regulatory requirements. [This includes the assessment of associated risks.](#)
- To ensure high level of customer satisfaction;
- To facilitate continual improvement;
- To comply with requirements of [AS 9100](#) standard.

2.2 The output of quality system planning is documented in this quality manual, associated operational procedures and in other referenced documents. These documents identify and define all elements and processes of the quality system.

2.3 Changes to the quality system are planned within the framework of management reviews (refer to Operational Procedure [QOP-56-01](#), Management Review). These changes may be in response to changing circumstances, such as product, process, capacity, other operational or organizational changes or to improve the effectiveness and efficiency of the quality system.

## Quality System Planning

### 3. Product realization and verification planning

- 3.1 Planning of product realization, verification and validation processes is addressed in Section 7.1 of this manual.

### 4. Continual improvement planning

- 4.1 Improvements of the quality system are planned within the framework of management reviews. The output of this planning is expressed in the form of quality system objectives, as defined above in Clause 1.3 of this section, and in Operational Procedures [QOP-85-01](#), Continual Improvement; and [QOP-56-01](#), Management Review.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-56-01](#): Management Review
- Operational Procedure [QOP-85-01](#): Continual Improvement

MANAGEMENT RESPONSIBILITY
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<b>Organization and Communication</b>
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**GENERAL POLICY**

*Functions and their interrelation within Airtronics, Inc. are defined and communicated.*

*Top management appoints a management representative responsible for establishment and maintenance of the quality system, and for reporting to the top management on the performance of the system.*

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

**PROCEDURAL POLICIES**

**1. Responsibility and authority**

- 1.1 Departments within the company, and their interrelations, are defined in the organizational chart enclosed at the end of this section.
- 1.2 All departments and functions in the company are responsible for implementing, maintaining, and improving the quality system.

Following specific responsibilities and authorities are assigned:

**Top Management**

- Formulates the quality policy
- Provides resources necessary to maintain and improve the quality system
- Conducts management reviews of the quality system

Throughout this manual, the term Top Management refers to the President. The Executive Team refers to the Representatives who are responsible for Production, Engineering, Purchasing, Accounting, Contracts and Quality Assurance.

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## Organization and Communication

### Technician

The primary duties of a technician are to test, troubleshoot, repair, overhaul and assembly of aircraft components & related items. The technician is responsible for all quality procedures related to these processes. The procedures are part of the required training for all new hires.

Qualifications: Technicians are hired based on past job experience, no formal education is required. Technicians must demonstrate through job history that they possess knowledge necessary to perform the position.

### Production Control

Manages the flow of all customer products in house; including data base tracking, administrative paperwork, scheduling work flow with technicians. Responsible for creating and maintaining QDS's. This position reports to the President for tasks as needed to track production needs.

Qualifications: Must possess strong administration skills as evident from past job history. No education minimum required.

### Purchasing

Responsible for all purchasing of items to support customer products and day to day needs for Airtronics, Inc.

Qualifications: Must possess strong administration skills as evident from past job history. No education minimum required.

### Quality Assurance

Quality is responsible for the oversight of the quality system. Review all customer products for compliance to specifications and procedures of Airtronics, Inc quality system. Maintain receiving inspection and perform audits of the quality system.

Qualifications: No formal education required. Applicants are preferred to have past job experience in quality. However on the job training is available for any applicant that would be considered for the position.

## Organization and Communication

### Material Control

Responsible for the handling and issuing of all material in our inventory control system. Including piece parts, test equipment, tooling and support to production technicians for product needs. This position works closely with purchasing and production control to maintain material on hand as needed for product support.

Qualifications: No formal education required. Strong administrative skills are a plus. On the job training will be provided.

### Shipping

Responsible for the receipt, processing and outbound shipping of all product and items that come in & out of Airtronics, Inc. facility. This position works with material control.

Qualifications: No formal education required. On the job training is provided.

### Administration

Responsible for all clerical needs of the company including but not limited to invoicing, filing and communications.

Qualifications: No formal education required. Good references and work ethic important. Clerical job experience preferred. On the job training is provided.

### Accounting

Responsible for accounts payable, accounts receivable, payroll and taxes.

Qualifications: Must demonstrate through job history experience in these areas. No formal education required.

### Contracting

Responsible for oversight of all government contracts. This includes reporting, invoicing, correspondence and data records collection of contract related items.

Qualifications: No formal education required on the job training provided. Administrative skills preferred as evident in job history.

## Organization and Communication

### 2. Management ISO Representative

2.1 Airtronics, Inc. appoints as the [AS 9100](#) Management Representative the Quality Assurance Manager. [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:

- Ensure that the quality management system is implemented, maintained and continually improved;
- Promote awareness of customer requirements throughout the organization;
- Reports to the Top Management on the performance of the quality system, including needs for improvement;
- Ensure promotion of awareness of customer requirements throughout Airtronics
- The Management Representative will coordinate communication with external parties on matters relating to the quality system and [AS 9100](#) registration.

### 3. Internal communication

3.1 Internal communication regarding the quality system flows two ways:

Top Management shall ensure that appropriate communications processes are established within the organization and that communication takes place regarding the effectiveness of the Quality Management System.

The organization communicates to the management information and data regarding customer needs and expectations, customer satisfaction, quality performance, the effectiveness of the quality system and opportunities for improvement.

3.2 The information is communicated through manuals, procedures, instructions, drawings, specifications, quality records, reports, etc.; and through training, on-the-job instruction and meetings. Operational Procedures [QOP-42-01](#), Quality System Documentation; [QOP-42-02](#), Control of Documents; and [QOP-62-01](#), Training and Awareness, regulate these activities.

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## Organization and Communication

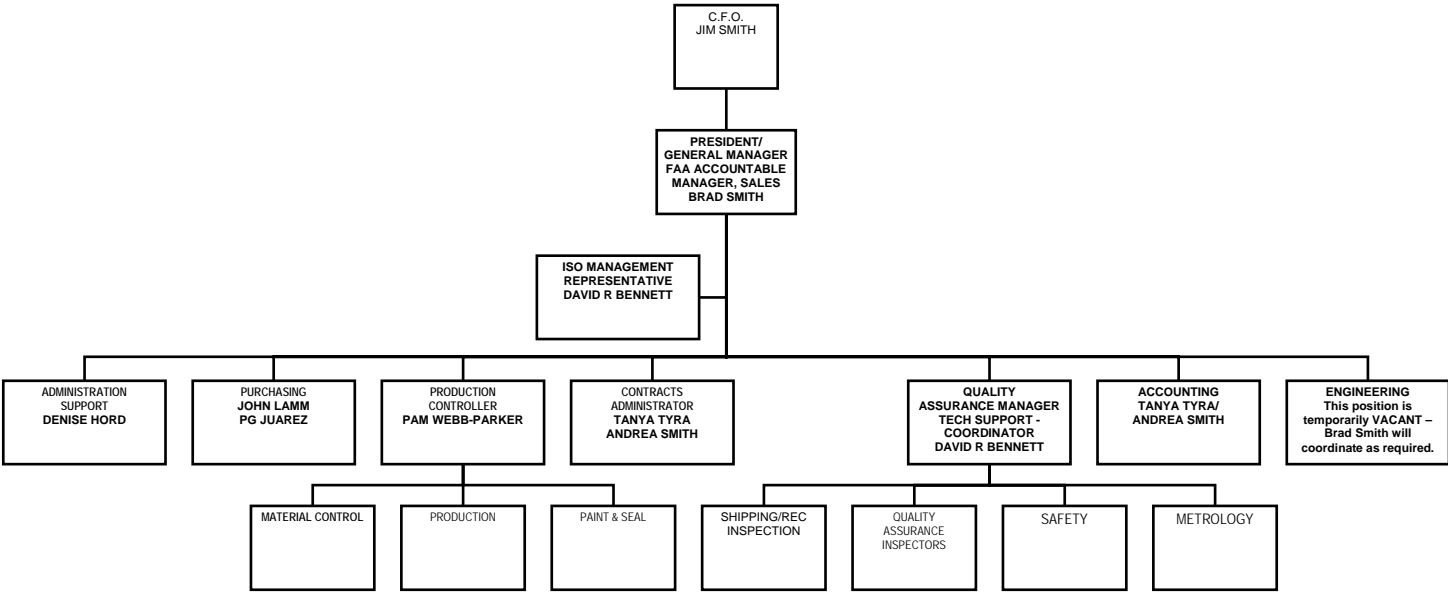
- 3.3 Management review meetings have a special role in ensuring proper communication to all members. The meeting provides the framework for the organization to report on the status of quality-related issues and activities, and for the management to formulate policies and directives to change/improve the quality system. This process is defined in Operational Procedure [QOP-56-01](#), Management Review.
- 3.4 Quality Assurance Manager has the overall responsibility for ensuring that all pertinent documents, reports and records are distributed to appropriate departments and functions. Information and data about quality performance and the effectiveness of the quality system are reported to the top management.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-56-01](#): Management Review
- Operational Procedure [QOP-62-01](#): Training and Awareness
- Operational Procedure [QOP-42-01](#): Quality System Documentation
- Operational Procedure [QOP-42-02](#): Control of Documents

**Organization and Communication**

**AIRTRONICS, INC.  
ORGANIZATIONAL CHART**



MANAGEMENT RESPONSIBILITY			
Section 5.6	Section Rev.: 4.0	Rev. Date: 10/21/09	Section Page 1
<b>Management Review</b>			

**GENERAL POLICY**

*Airtronics, Inc. Top Management conducts periodical reviews of the quality system. The review evaluates the suitability and effectiveness of the system, identifies opportunities for improvement and considers the need for changes to the quality policy and quality objectives.*



**PROCEDURAL POLICIES**

**1. General**

- 1.1 The purpose of management review meetings is to:
  - Evaluate the suitability, adequacy and effectiveness of the quality system;
  - Consider changes to the quality management system, to the quality policy and quality objectives;
  - Identify opportunities for improvement of the quality system, processes and products.
- 1.2 Management review meeting is held a minimum of once per year, chaired by Top Management and are attended by request, representatives from Quality Assurance, Engineering, Production, Purchasing, and Contracts Administration.
- 1.3 The Quality Assurance maintains records of these meetings.

**2. Review input**

- 2.1 Input into the management reviews consists of information and data related to quality performance of the organization. At a minimum, this includes:
  - Results of audits,
  - Customer feedback and complaints,
  - Process performance and product conformance data,

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## Management Review

- Review all preventive/corrective actions and it's effectiveness of the quality system,
- Changes that could affect the quality system,
- Follow-up actions from earlier management reviews,
- Recommendations for improvement.

Section [8.4](#) of this manual, Analysis of Data, and Operational Procedure [QOP-56-01](#), Management Review, define the scope, and method of presentation, of the input information and data.

### 3. Review output

- 3.1 Management reviews are concluded with actions related to improvement of the quality management system, improvement of processes and products to better meet customer requirements. The review also identifies resources needed to implement these actions.
- 3.2 Results of management reviews are documented in the minutes of the review meeting. The minutes include improvement actions, assign responsibilities and allocate resources for implementation of these actions.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-56-01](#): Management Review

## RESOURCE MANAGEMENT

Section 6.1

Section Rev.: 3.0

Rev. Date: 10/21/09

Section Page 1

**Provision of Resources****GENERAL POLICY**

*Airtronics, Inc. Top Management is committed to provide adequate resources for the implementation and improvement of the quality system, and for addressing customer satisfaction.*

**PROCEDURAL POLICIES****1. General**

1.1 Resources required for implementation and improvement of the quality system, addressing customer satisfaction, may include people, suppliers, information, infrastructure, work environment and financial resources.

**2. Determination of resource requirements**

2.1 The Quality Assurance Manager and other management personnel involved in the quality system are responsible for determining resource requirements for the implementation and improvement of the system.

2.2 The Top Management is responsible for determining resource requirements for addressing customer satisfaction. This is based on input from other management personnel responsible for activities relevant to particular aspects of customer satisfaction. Operational Procedure [QOP-82-01](#) explains how information about customer satisfaction is collected and analyzed.

2.3 The principal forum for determining and communicating resource requirements are management reviews of the quality system. Operational Procedure [QOP-56-01](#), Management Review, explains this process.

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## Provision of Resources

### 3. Provision of resources

- 3.1 Top Management has the responsibility and authority for provision of resources.
- 3.2 Allocation of resources for particular activities is integrated with the process of defining and initiating the activity. It may take the form of personnel assignments, allocation of space or equipment, training, procurement decisions, budgets, etc.
- 3.3 Allocation of resources may be documented in the quality manual, operational procedures, minutes of meetings, memoranda or any other form. Approval of resource allocations may be also communicated verbally.
- 3.4 Management review of the quality system is the principal forum for allocation of resources for the operation and improvement of the system. All actions initiated by the review are supported by allocation of specific resources necessary for their implementation. Operational Procedure [QOP-56-01](#), Management Review, defines this process.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-56-01](#): Management Review
- Operational Procedure [QOP-82-01](#): Customer Satisfaction

## RESOURCE MANAGEMENT

Section 6.2.1

Section Rev.6.0

Rev. Date: 10/21/09

Section Page 1

**Competence, Awareness and Training****GENERAL POLICY**

*Airtronics, Inc. identifies personnel training needs, provides required training and evaluates the effectiveness of the training provided. Personnel assigned to perform specific tasks, operations and processes are qualified on the basis of appropriate education, experience or training. Employees are made aware of the relevance and importance of their activities and how they contribute to the achievement of quality objectives. Records of personnel training are maintained.*

**PROCEDURAL POLICIES****1. Identification of training needs and awareness programs**

- 1.1 Top Management is responsible for identifying training needs and awareness programs for company-wide participation, such as: general orientation, rules and regulations, quality system, safety and other company-wide systems and issues.
- 1.2 Departmental training is primarily focused on increasing the level of skills in operating equipment and processes, conducting inspections and testing.
- 1.3 In addition, training needs are often identified in response to corrective or preventive action, which may be caused by inadequate training.

**2. Awareness and training programs**

- 2.1 Airtronics, Inc. provides general training ([QOP-62-01](#)) in the following activities of company-wide training and awareness programs: Where applicable, Airtronics will provide training or take appropriate actions to achieve the necessary competence.
  - Periodic review of company policies.
  - Periodic review of company safety policies and procedures.
  - Periodic review of operating procedures and practices of the Quality System.

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## Competence, Awareness and Training

### 3. Effectiveness of training

- 3.1 Effectiveness of training ([QOP-62-01](#)) is evaluated as appropriate.
- 3.2 A review of all training and awareness programs ([QOP-62-01](#)), conducted within the framework of management reviews of the quality system.
- 3.3 Operational Procedure [QOP-56-01](#), Management Review, prescribe more specific methods for evaluating particular categories of training and awareness programs.

### 4. Training records

- 4.1 Training records ([FORM 2000-C-039](#)) are established and maintained for each employee by Quality Assurance.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-56-01](#): Management Review
- Operational Procedure [QOP-62-01](#) Training and Awareness

RESOURCE MANAGEMENT			
Section 6.2	Section Rev.2.0	Rev. Date: 10/21/09	Section Page 1
HUMAN RESOURCES			

**GENERAL POLICY**

*Airtronics, Inc. screens personnel for employment on the basis of appropriate education ,training, skills and experience or equivalent . New employees are made aware of the relevance and importance of their activities and how they contribute to the achievement of quality objectives.*

**PROCEDURAL POLICIES**

- 1. Employment screening process**
  - 1.1 Top Management is responsible for screening personnel who’s work affects conformity to product requirements. (directly or indirectly) They shall demonstrate competence in the areas of education, training, skills and experience.
  - 1.2 Employees selected will be orientated on the company rules and regulations by Top Management.
  - 1.3 Quality Manager will instruct new employees on the quality system, safety and other company-wide systems and issues.
- 2. Employee training process**
  - 2.1 OJT will be used for new employees during initial process of training.
  - 2.2 Quality Manager will provide the training on processes and assigned product.
  - 2.3 Training will continue with experienced personnel.
- 3. Records**
  - 3.1 Training records will be established FORM 2000-C-039 & FORM 2000-C-046.

**ASSOCIATED DOCUMENTS**

- Operational Procedure [QOP-62-01-1](#) Training and Awareness

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RESOURCE MANAGEMENT			
Section 6.3	Section Rev.: 3.0	Rev. Date: 10/21/09	Section Page 1
<b>Infrastructure</b>			

**GENERAL POLICY**

*Suitable facilities, equipment, supporting services, and other necessary infrastructure are determined, provided and maintained, as required to achieve conformity to product requirements.*

**PROCEDURAL POLICIES**

**1. Infrastructure and Facilities**

- 1.1 Planning of new, and/or modification of existing infrastructure and facilities is usually conducted in conjunction with product or process changes; capacity and/or work force expansions; and other such events. Facilities may also be expanded or modified to improve productivity and/or quality, or to improve the work environment.
- 1.2 Department Representatives are responsible for identifying the need and requirements for new, and/or modification of existing infrastructure and facilities in their departments. Requests for significant changes and/or expansions of facilities are submitted to the Top Management for review and approval.

**2. Supporting services and maintenance of facilities**

- 2.1 Supporting services required by Airtronics, Inc. include transportation, communication or information systems.
  - Transportation services are usually purchased from parcel delivery, courier services, from trucking or other transportation companies. Coordination of these services is managed by shipping and is conducted in accordance with operational procedure [QOP-74-02](#), Purchasing.
  - Communication services are provided by various telephone, wireless and internet access companies. *Top Management* is responsible for administrating and coordinating these contracts.

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## Infrastructure

- 2.2 Maintenance of the buildings and facilities is performed as required by Airtronics, Inc.
- 3. Equipment maintenance**
- 3.1 Equipment, machines, hardware and software are regularly maintained in accordance with maintenance plans specified by equipment manufacturer.

### ASSOCIATED DOCUMENTS

## RESOURCE MANAGEMENT

Section 6.4

Section Rev.: 3.0

Rev. Date: 10/21/09

Section Page 1

**Work Environment****GENERAL POLICY**

*Airtronics, Inc. provides for its employees suitable work environment needed to achieve conformity to product requirements. Note: Factors that may affect the conformity of the product include physical, environment and other factors such as noise, temperature, humidity, lighting, weather, cleanliness, protection from electrostatic discharge, etc.*

**PROCEDURAL POLICIES****1. Human factors**

- 1.1 Top Management and departmental Representatives are responsible for ensuring suitable social and psychological conditions in the workplace. This is to include such aspects as interaction and communication between employees, employee harassment, conflict resolution and so forth. Relevant workplace policies are implemented mainly through training and awareness programs. (Refer to Operational Procedure [QOP-62-01](#), Training and Awareness.)

**2. Health and safety**

- 2.1 Health and safety management system is independent from the quality management system. It is administrated by the Safety Officer and is documented in the [Health and Safety](#) (H&S) manual.

**ASSOCIATED DOCUMENTS**

- Operational Procedure [QOP-62-01](#), Training and Awareness

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## PRODUCT REALIZATION

Section 7.1

Section Rev.: 3.0

Rev. Date: 09/21/09

Section Page 1

**Planning of Product Realization****GENERAL POLICY**

*Planning of product realization processes includes determination of requirements, quality objectives for products, process documentation, establishment of product verification and validation programs and for records necessary to demonstrate process and product conformity. This plan also includes our processes and approach to project management, risk management, configuration management and control of work transfers. The plan also defines requirements*

**PROCEDURAL POLICIES****1. Product requirements and quality objectives**

- 1.1 Product requirements and quality objectives for product are defined and communicated in drawings and specifications, contract documents, external standards and workmanship standards and applicable legal and regulatory requirements.
- 1.2 [Section 7.2](#) of this manual explains in more detail how customer and product requirements are determined and reviewed.

**2. Product realization planning**

- 2.1 Product realization planning includes, as applicable:
  - Quality objectives and requirements for the product. [When planning quality objectives and requirements for the product, the following is taken into consideration;](#)
    - [Product and personal safety](#)
    - [Reliability, availability, and maintainability](#)
    - [Producibility and inspectability](#)
    - [Suitability of parts and materials used I the product](#)
    - [Selection and development of embedded software](#)

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## Planning of Product Realization

- Recycling or final disposal of the product at the end of its life
  - Definition and evaluation of production operations and processes,
  - Development of adequate and capable processes,
  - Identification of special processes and consideration of associated risks and consequences,
  - Establishment and implementation of appropriate process control measures,
  - Development of instructions and training for production personnel
  - Requirements for records necessary to demonstrate process conformity.
  - Configuration management appropriate to the product
  - Identification of resources to support operation and maintenance of the product.
- 2.2 Product realization plans are established in collaboration between Production, Engineering, and Quality Assurance. The plans are defined in various types of production documents, such as production work orders, control plans, operator instructions, process validation reports, etc.
- 2.3 Operational procedures related to [Section 7.5](#), Operations, explain how outputs of product realization planning are used.
- 3. Product verification and validation planning**
- 3.1 Product verification and validation plans determine the inspection and testing program for a product, for materials and components incorporated into the product. This includes:
- Identification of inspection,
  - Inspection and testing scope, frequency and method,
  - Acceptance criteria,
  - Records needed to provide evidence that the realization processes of resulting product meet requirements.
-

## Planning of Product Realization

- 3.2 Quality Assurance and Engineering are responsible for development of product verification plans. The output of this planning shall be in a form suitable for the organizations method of operation..
- 3.3 Operational Procedures [QOP-74-03](#), Verification of Purchased Product; [QOP-72-04](#), In-process Inspections; and QOP-52-05 Final Inspection.

### 4. Project Management

- 4.1 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 Project Management / Risk / Engineering Analysis Form. (2000-E-01) and the Production Project Management / Risk Assessment / Product Audit and Review Form (2000-C-053) serve as the Airtronics Project Management documents.

### 5. Risk Management

- 5.1 Airtronics has established, implemented and maintains a process for managing risk to the achievement of applicable requirements that includes as appropriate to the organization and the product;  
The method of determining “risk” during the evaluation of new and existing product is inclusive and recorded on the Project Management / Risk / Engineering Analysis Form referenced above and the Production Project Management / Risk Assessment / Product Audit and Review Form referenced above.

- 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.

### 6. Configuration Management

- 6.1 Airtronics has established, implemented and maintain a configuration management process that includes, appropriate to the product. The method for the planning of configuration management during the evaluation of new and existing product is inclusive and recorded on the Project Management / Risk / Engineering Analysis Form referenced above and the Production Project Management / Risk Assessment / Product Audit and Review Form referenced above and may include;

## Planning of Product Realization

- Planning for configuration management
- Configuration identification
- Change control
- Configuration status accounting
- Configuration audit

### 7. Control of Work Transfers

7.1 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 is inclusive and recorded on the Project Management / Risk / Engineering Analysis Form referenced above and the Production Project Management / Risk Assessment / Product Audit and Review Form referenced above and may include;

7.1.1 Product realization plans are established in collaboration between Production, Engineering, and Quality Assurance. The plans are defined in various types of production documents, such as production work orders, control plans, operator instructions, process validation reports, etc.

Operational procedures related to [Section 7.5](#), Operations, explain how outputs of product realization planning are used.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-74-03](#): Verification of Purchased Product
- Operational Procedure [QOP-42-02](#): Control of Documents
- Operational Procedure [QOP-82-04](#): In-process Inspections
- Operational Procedure [QOP-82-05](#): Final Inspection

PRODUCT REALIZATION			
Section 7.2	Section Rev.: 6.0	Rev. Date: 10/21/09	Section Page 1
<b>Customer-related Processes</b>			

**GENERAL POLICY**

*Product requirements are determined to include customer requirements, legal regulatory and other necessary requirements that may not be specified by customers. Contracts are reviewed to ensure that product requirements are defined and can be met and to resolve any incomplete or conflicting requirements. Any amendments or changes are likewise reviewed and are communicated to all relevant functions.*

*Arrangements for communication with customers relating to product information, order handling, customer feedback and complaints are defined and implemented. Where appropriate, operational procedures and instructions for these activities are established and implemented.*

**PROCEDURAL POLICIES**

**1. CUSTOMER AND PRODUCT REQUIREMENTS**

**1.1 Product requirements**

1.1.1 Product requirements are determined and reviewed by Top Management. This often involves input from Engineering, Production, Purchasing and Quality Assurance, depending on the nature and complexity of the product.

Contract review is performed in conjunction with the project management process. Reference QOP-73-01-Manufacturing Control for details on contract review process utilized at Airtronics.

1.1.2 Airtronics will determine the requirements specified by the customer, including requirements for:

- Delivery and post delivery activities. (This may include, actions under warranty provisions, contractual obligations such as maintenance services and supplementary services such as recycling or final disposal)
- Requirements not stated by the customer but necessary for specified intended use, where known.

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## Customer-related Processes

- Statutory and regulatory requirements related to the product.
- Any additional requirements determined by the organization.

1.1.3 Review of requirements related to product includes,

- Ensuring product requirements are defined
- Contract or order requirements differing from those previously expressed are resolved.
- Airtronics has the ability to meet the defined requirements
- [Special requirements of the product are determined.](#)
- [Risks have been identified \(e.g., new technology, short delivery time frame\)](#)

### 1.2 Incomplete or conflicting requirements

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

### 1.3 Amendments

1.3.1 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 of customer requirements.

### 1.4 Record

1.4.1 Review of product/customer requirements are evidenced by Top Management's signature on the acceptance block of the solicitation/contract/purchase order.

1.4.2 On complex items, a review record (Form 2000-E-001) is established by Engineering and Quality Assurance. Upon review and approval of the requirements, Top Management will sign the acceptance of the PO/Contract.

1.4.3 Maintenance of contract review records are explained in [QOP-42-03](#), Control of Quality Records.

## Customer-related Processes

### 2. CUSTOMER COMMUNICATION

#### 2.1 Product Information

- 2.1.1 Top Management is responsible for developing the content and format for company's brochures, internet site and other forms of promotional and product information.
- 2.1.2 Only designated personnel from Executive Management Team are authorized to communicate with customers regarding product information.

#### 2.2 Inquiries and order handling

- 2.2.1 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.
- 2.2.2 Handling of order amendments is controlled to the same extent as the handling of initial 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.

#### 2.3 Customer feedback and complaints

- 2.3.1 Top Management and the Executive Management Team is responsible for receiving and processing customer feedback and complaints. Customer communications are reviewed and filed into the customer file.
- 2.3.2 Customer feedback and complaints are reviewed to allow for tracking of trends and evaluating improvement in specific aspects. Some complaints may be communicated to relevant functions within and outside the organization. Top Management and Quality Assurance decide how to respond to the customer and what corrective or preventive actions should be implemented internally.
- 2.3.3 Procedure [QOP-72-03](#), Customer Feedback and Complaints, provides detailed instructions how to receive, process and respond to customer feedback and complaints.

### ASSOCIATED SECTIONS AND DOCUMENTS

- Operational Procedure [QOP-72-03](#): Customer Feedback and Complaints
-

## Customer-related Processes

- Operational Procedure [QOP-42-03](#): Control of Quality Records

PRODUCT REALIZATION			
Section 7.3	Section Rev.: 4.0	Rev. Date: 10/21/09	Section Page 1
<b>Manufacturing Control</b>			

**GENERAL POLICY**

*Manufacturing activities are identified, qualified personnel are assigned to specific manufacturing responsibilities and organizational interfaces are defined and controlled. Input is formally documented and reviewed. The manufacturing process is verified and when applicable, is validated with prototypes or by other means. The manufacturing process is documented and checked before it is released for production.*

**PROCEDURAL POLICIES**

**1. General**

1.1 Airtronics, Inc. manufacturers specified customer products and installs modifications per customers print. The Production Team (Engineering, Project Engineer and Production) is responsible for the manufacturing processes. The quality system for manufacturing is defined in Procedure [QOP-73-01](#), Manufacturing Control.

**2. Project planning**

2.1 The Production Team is responsible for reviewing manufacturing projects, including verification, validation activities, scheduling the project, assignment of qualified personnel and control of technical interfaces.

**3. Inputs**

3.1 Customer inputs may be defined and documented. The input for customer products comes from Sales and is documented. Manufacturing processes are reviewed for any changes approved before their release.

**4. Outputs**

4.1 Manufacturing output documents are checked and approved before they are released for production. All manufacturing output documents are maintained and controlled per [QOP 42-02](#).

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## Manufacturing Control

### 5. Manufacturing reviews and verification

- 5.1 Customers prints are verified by reviewing and recording applicable manufacturing/processes. For products, where there is no experience with similar products, a prototype may be built and tested for validation.

### 6. Changes

- 6.1 Manufacturing process changes are initiated and documented for evaluation. The changes are recommended or rejected, by the Production Team and Quality Assurance, as applicable.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-73-01](#): Manufacturing Control
- Operational Procedure [QOP-42-02](#): Control of Documents

PRODUCT REALIZATION			
Section 7.4	Section Rev.: 3.0	Rev. Date: 10/21/09	Section Page 1
<b>Purchasing</b>			

**GENERAL POLICY**

*Airtronics, Inc. evaluates its suppliers and purchases only from those that can satisfy quality requirements. (This includes customer-designated sources). Quality performance of suppliers is monitored and evaluated. Purchasing documents clearly and completely describe ordered products, including quality requirements. Purchasing documents are reviewed and approved prior to release. Purchased products are verified before they are used.*

**PROCEDURAL POLICIES**

**1. Supplier evaluation**

1.1 Purchasing and Quality Assurance establish the criteria for selection of service type suppliers and conduct supplier evaluation. **Airtronics will determine and manage the risks when selecting and using suppliers.** Suppliers are rated APPROVED or NOT APPROVED. Existing suppliers with a satisfactory quality performance history are evaluated and are initially rated as APPROVED. Supplier evaluation process is governed by Procedure [QOP-74-01](#), Supplier Evaluation.



**2. Supplier quality performance monitoring**

2.1.1 Quality performance of suppliers is monitored.

2.1.1.1 Purchasing along with Quality periodically review supplier performance; records of these reviews shall be used as a basis for establishing the level of controls to be implemented.

2.1.1.2 Suppliers showing inadequate performance may be asked to implement corrective action. If the requested corrective actions are not implemented and there is no improvement, the supplier is downgraded to the NOT APPROVED rating and is discontinued. The system for monitoring suppliers is defined in Procedure [QOP-74-01](#).

2.1.1.3 Purchasing and Quality have the authority to disapprove the use of any supplier.

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## Purchasing

### 3. Approved supplier

- 3.1.1 Purchasing maintains a supplier list on the computer system data base [that includes approval status \(e.g., approved, conditional, disapproved\) and the scope of approval \(e.g., product type, process family\)](#) Orders may only be placed with OEM's or their suppliers, who stock the government approved part as identified by the OEMs part number.
- 3.1.2 [Where required both Airtronics and any supplier will use only customer approved special process sources.](#)
- 3.2 Raw materials can be purchased from any vendor per the applicable specifications required.

### 4. Purchasing information

- 4.1 Purchasing documents are prepared by the Purchasing department. *Top Management* and Purchasing Representative review and approve all purchasing documents prior to release.
- The documents clearly and completely describe the products to be purchased including where appropriate, the following:
- 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.](#)

## Purchasing

- 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.
- 4.2 The preparation, review, and approval of purchasing documents are explained in Procedure [QOP-74-02](#), Purchasing.
- 5. Verification of purchased product**
- 5.1 Purchased products are inspected by receiving QA. This includes verification of product identity and quantity, visual inspection and, where applicable, verification that all requested certificates and quality records are available.
- 5.1.1 [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.](#)
- 5.2 QA inspection may not be necessary when products are supplied with records or certificates demonstrating traceability and conformity to ensure purchased products meets specified purchase requirements. When the supplier is qualified based on their quality system certification and a satisfactory quality performance history.
- 5.3 [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.](#)
-

## Purchasing

- 5.4 When Airtronics and/or our customer intend to perform verification activities at the suppliers facility, Purchasing will ensure that the information on the purchasing document includes our intended verification arrangements and method of product release.
- 5.3 Quality Assurance is responsible for selecting appropriate methods for purchased product verification and acceptance. Operational Procedure [QOP-74-03](#), Verification of Purchased Product, sets forward detailed rules for selecting product verification methods and for performing receiving and QA inspections.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-74-01](#): Supplier Evaluation
- Operational Procedure [QOP-74-02](#): Purchasing
- Operational Procedure [QOP-74-03](#): Verification of Purchased Product

PRODUCT REALIZATION			
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<b>Operations</b>			

**GENERAL POLICY**

*Operations and production processes are monitored and are validated where appropriate.*

*Equipment used in production and for monitoring and measurement activities are maintained.*

*Methods for product release and delivery are defined.*

*Materials, components, parts, subassemblies, and customer products are identified. When required, traceability of materials and processes is recorded and maintained. Inspection and test status of product is identified to ensure that only product that has passed the required inspection is processed.*

*Customer-supplied material is normally controlled in the same manner as purchased material.*

*Appropriate handling, storage and preservation methods are implemented to prevent product damage or deterioration. Receipt and dispatch to and from storage areas are controlled. The condition of products in stock is regularly assessed. Product packaging materials and methods are specified and controlled.*

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## Operations

### PROCEDURAL POLICIES

#### 1. OPERATIONS CONTROL

##### 1.1 Product and process information

1.1.1 Information specifying product characteristics is communicated to production in the form of approved drawings, parts list, flowcharts, inspection instructions, specifications, samples, work orders, and product-specific templates and other tooling. **Controlled conditions for product and service provision include as applicable:**

- 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).

1.1.2 Airtronics shall establish, implement and maintain process controls, including where key characteristics have been identified. Control plans and appropriate work instructions and are communicated to personnel.

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

1.1.4 Where in-process verification of conformance cannot be performed at a later stage of product realization, verification points are identified and implemented.

## Operations

- 1.1.5 Special processes are also considered in the planning stage.
- 1.1.6 Risks associated with product and processes are also considered in the planning stage.
- 1.1.7 This information is controlled in accordance with Operational Procedure [QOP-42-02](#), Engineering, Production and Quality Assurance determine the scope, form, and distribution of product specifications.
- 1.1.8 Product and process information required is communicated through the work order or is included in technical manuals. Operational Procedures QOP-75-01, Production Control.

### 1.2 Production Process Verification

- 1.2.1 Airtronics performs first article inspection 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 to the first article occur a new first article is performed. Airtronics utilizes the guidelines set forth in AS 9102 for first article inspection process.

### 1.3 Control of Production Process Changes

- 1.3.1 All personnel authorized to approve the following types of changes to production processes are identified and are responsible for:
- Obtaining acceptance of changes that require customer and/or regulatory authority approval as defined in the contract or regulatory requirements.
  - Ensure proper documentation is for changes affecting processes, production equipment, tools and programs is established, implemented and controlled.
  - Ensure that the results of changes to production processes is verified as effective and that the desired results were achieved without adverse affect to product quality.

## Operations

### 1.4 Control of Production Equipment, Tools and Software Programs

- 1.4.1 Production equipment, tools and software programs used to automate and control/monitor product realization processes shall be validated prior to release for production and shall be maintained.
- 1.4.2 Production equipment that is in storage shall be periodically checked for condition and to ensure preservation.

### 1.5 Control of Service Operations

- 1.5.1 Airtronics does not perform service activities outside of the facility. All in-house service activities are within the scope of our quality system and handled according to our documented procedures.

### 1.6 Work instructions

- 1.6.1 Work instructions and workmanship standards may be in the form of manuals or procedures. They instruct on how to carry out a process or perform an operation or task.

### 1.7 Measuring and monitoring equipment

- 1.7.1 Requirements for measuring and monitoring equipment are determined by Quality Assurance. This is in accordance with process control and product verification programs defined in product realization planning (refer to Section 7.1 of this manual).
- 1.7.2 Control system for measuring and monitoring equipment is defined in Operational Procedure QOP-76-01, Measuring and Monitoring Equipment

### 1.8 Process monitoring and control

- 1.8.1 Processes are monitored through variety of approaches, activities and techniques. The system is designed to control:
- Information, material and human (operator) input into the process;
  - Technology, tools and equipment used;
  - Process performance;
  - Process output.

## Operations

Process monitoring activities are further defined in Section 8.2 of this manual. Activities related to process control are defined in Operational Procedures QOP-75-01, Production Control; QOP-75-02.

### 1.9 Product release and delivery

1.9.1 Products are released for delivery only after all specified activities have been satisfactorily completed and conformity of the product has been verified. Operational Procedure QOP-82-05, Final Inspection, define the system for final product verification and release.

### 1.10 Post Delivery Support

1.10.1 Airtronics provides post delivery support as applicable per contract requirements. 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.
- Controls required for off-site work. (e.g., Airtronics work undertaken at the customer's facility).

## 2. VALIDATION OF PROCESSES

### 2.1 Special processes

2.1.1 Processes where the resulting output cannot be verified by subsequent monitoring or measurement **and as a consequence** deficiencies become apparent only after the product is in use or the service has been delivered.

2.1.2 Production and Quality Assurance are responsible for identifying, defining the criteria, validating, and documenting special processes.

## Operations

They are also responsible for review, qualification and approval of the processes, approval of equipment, qualification of personnel and the use of methods and procedures.

Where applicable, Engineering may assist with establishing validation specifications and testing of samples.

### 2.2 Validation

2.2.1 Control of significant operations and parameters of processes are validated by applicable methods, such as equipment, work instructions, process procedures and changes to such documents are controlled.

2.2.2 Production and Quality Assurance are responsible for selecting and implementing appropriate process validation. Arrangements will be made as applicable for these processes:

- Defined criteria for review and approval of the process.
- Approval of equipment and qualification of personnel.
- Use of specific methods and procedures
- Requirements for records
- Revalidation

Documented work instructions are implemented as needed, based on the complicity of the product.

2.2.3 Records are established and maintained as appropriate. These records may include process validation reports, equipment maintenance records, first article inspections and tests, operator training records, and so forth.

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## Operations

### 3. IDENTIFICATION AND TRACEABILITY

#### 3.1 Product identification

- 3.1.1 Products are identified with unique numbers, codes, or names [throughout product realization](#). The identification is the same as, or is cross-referenced with, the designations used in drawings, specifications, bills of materials, parts lists, purchase orders, etc. Products are identified by marking, labeling, or tagging the products or their packaging. [Care is taken to identify any difference between the actual configuration and the agreed configuration](#).
- 3.1.2 During [all stages of product realization](#), products are usually identified by work orders/purchase order. Parts and components may also be identified by labels, tags or the containers in which they are held.
- 3.1.3 Final products are identified by their name and unique number, which is labeled or marked on the products and/or is printed on the primary product packaging.
- 3.1.4 Rules and activities related to identification of products are governed by Operational Procedure QOP-75-03, Product Identification and Traceability. Additional relevant procedures are: [QOP-75-01](#), Production Control; [QOP-74-03](#), Verification of Purchased Product; [QOP-82-05](#), Final Inspection; and [QOP-75-06](#), Packaging, Labeling and Shipping.

#### 3.2 Traceability

- 3.2.1 When required by contracts, laws and regulations, or voluntary standards traceability is implemented to the extent specified. Traceability may also be implemented for internal reasons, to facilitate corrective action. [When implemented Airtronics will include:](#)
- [Maintaining identification throughout the product life.](#)
  - [Traceability will be maintained for all products from the same batch of raw material or from the same production batch, including to destination.](#)
  - [Traceability will be maintained for assembly components and next higher level components.](#)
  - [Keep easily retrievable sequential records of the manufacture, assembly, inspection/verification.](#)

## Operations

3.2.2 As required, traceability may apply to materials, components, parts, production processes, environmental conditions, inspection and testing, and personnel responsible for processing and verification of products. The scope of traceability is documented in product manufacturing specifications or the production work order.

3.2.3 Activities related to establishment and maintenance of traceability is regulated by Operational Procedures [QOP-75-03](#), Product Identification and Traceability, and [QOP-75-01](#), Production Control.

### 3.3 Inspection status identification

3.3.1 [Airtronics utilizes various media for acceptance authority such stamps, tags, signature, etc. All methods of acceptance authority are documented and appropriately controlled.](#)

3.3.2 Following every inspection or test, products are identified to indicate whether they have passed or failed the inspection. This is to prevent nonconforming product from being used or dispatched.

3.3.3 QA inspectors, receiving clerks, and production personnel are authorized to carry out inspections/testing and are responsible for identifying product inspection status. All personnel handling products are responsible for maintaining the identification.

3.3.4 Products that have passed receiving inspection are moved to the material stockroom or designated staging areas in production. Where intermingling with other product is a possibility, the inspected items are also appropriately tagged or labeled. Detailed rules for identifying inspection status of purchased products are provided in procedure [QOP-74-03](#) Verification of Purchased Product.

3.3.5 Status of an in-process inspection is usually identified by a sign-off in the work order accompanying the product. Operational procedure [QOP-82-04](#), In-process Inspections, provides more detailed instructions.

3.3.6 Products that pass the final inspection are placed in the finished product area that is designated and used only for this purpose. In addition, finished products are labeled with an ACCEPTANCE stamp or tag, and their release is signed off in the work order on the line where the final inspection is called out. Rules for identifying inspection status of finished products are provided in procedure [QOP-82-05](#), Final Inspection.

## Operations

3.3.7 Products that fail any inspections or tests are labeled with REJECTED sticker or tag, and are segregated and/or quarantined. Whenever a nonconforming product is identified, the nonconformity is documented using a Nonconforming Report Form [83-01-1](#). Procedure [QOP-83-01](#), Control of Nonconforming Product, instructs on how to identify and process nonconforming product.

### 4. CUSTOMER PROPERTY

#### 4.1 Receiving

4.1.1 Customer-supplied products are received and inspected following the same procedure that applies to purchased products, i.e., Operational Procedure [QOP-44-03](#), Verification of Purchased Product. In the event the supplied products fail receiving inspection, or are not suitable for any other reason, the customer is contacted.

[4.1.2.1 Customer property can include customer furnished personal data used for design, productions and/or inspection.](#)

#### 4.2 Marking, storage, and handling

4.2.1 Marking, storage, handling and preservation of customer supplied products follow the same procedures that apply to purchased products. The applicable procedures are [QOP-75-03](#), Product Identification and Traceability; [QOP-75-04](#), Product Handling and Preservation; and [QOP-75-05](#), Storage Areas.

4.2.2 Returnable packaging are permanently marked so that ownership of each item is visually apparent.

4.2.3 Customer's documents, and other property are protected to the same extent as internal Airtronics documents of similar content, unless there are contractual requirements for special measure to protect customer's intellectual property.

#### 4.3 Special requirements

4.3.1 When specified in a contract, special handling instructions from customers will take precedent over the company's standard procedures.

#### 4.4 Loss or damage

4.4.1 [Customers are contacted](#) in the event of loss, damage, deterioration or unsuitability of their products. [Records are maintained of this activity.](#)

## Operations

### 5. PRESERVATION OF PRODUCT

#### 5.1 Product handling and preservation

5.1.1 Production is responsible for ensuring preservation of product during internal processing and delivery to its destination [in order to maintain conformity to requirements](#). Special attention to ensure containers holding products are suitable and are in good condition, that equipment used for internal transportation of products is well maintained and is properly operated, and that products are adequately protected during production and storage. Preservation shall also apply to all sub-assembly parts of a product.

5.1.2 [When applicable in accordance with product specification and applicable statutory and regulatory requirement.](#)  
[Provisions will include:](#)

[5.1.2.1 Cleaning](#)

[5.1.2.2 Prevention, detection and removal of foreign objects.](#)

[5.1.2.3 Special handling for sensitive products.](#)

[5.1.2.4 Marking and labeling, including safety warnings](#)

[5.1.2.5 Shelf life control and stock rotation.](#)

[5.1.2.6 Special handling for hazardous materials](#)

Procedure [QOP-75-04](#), Product Handling and Preservation, describes in detail how these policies are implemented.

#### 5.2 Storage

5.2.1 Stockrooms, and storage, staging and holding areas are controlled by the department that brings in new stock or uses the area. Only products that are properly identified and that have passed required inspections are authorized to enter and leave the stockrooms. Once a year the stockroom is inspected to assess the condition of stock.

5.2.2 When special storage conditions are specified, products are stored, where the specified conditions can be continuously maintained. These special conditions are monitored to ensure that they are maintained without interruption and that the product is not compromised at any time.

## Operations

- 5.2.3 Products with limited shelf life are identified with expiration dates. These perishable products are also rotated in the stockroom to ensure that the oldest product is used first.
- 5.2.4 Material and finished product stockrooms are controlled using an inventory management system. The system can report available in stock quantities, product location, and turn-over times. The system is used to optimize and minimize inventory levels.
- 5.2.5 Procedure [QOP-75-05](#), Storage Areas, governs the operation of stockrooms and storage, staging and holding areas.

### 5.3 Packaging and labeling

- 5.3.1 Primary packaging is boxes, bags or other packaging in which products are presented to the end users.
- 5.3.2 Secondary packaging is cardboard boxes, crates, or other additional packaging intended to contain and protect products for shipping and transportation.
- 5.3.3 Product packaging and labeling are defined in drawings, specifications and contract. These documents are issued and controlled in the same manner as other engineering documents. When appropriate, personnel involved with these processes are provided with instructions.
- 5.3.4 Shipping department is responsible for secondary packaging and labeling. The contract or specifications are compatible with requirements of commonly used carriers and for intended means of delivery (ground, sea, air). Packaging specifications are documented in the contract/drawings, and/or packaging instructions. Packaging specifications are maintained and controlled by Shipping.
- 5.3.5 Packaging and labeling activities are governed by Procedure [QOP-75-06](#) Packaging, Labeling and Shipping.

## Operations

### 5.4 Shipping and delivery

- 5.4.1 Shipping of finished products is initiated by the contract or purchase order. The order identifies the shipping consignee address, shipping due date, products to be shipped, labeling requirements, and transportation mode or carrier. Before products are dispatched, the shipping representative verifies that the shipment contains the same products and quantities as specified in the shipping order, and that packaging and labeling conform with customers and/or carrier requirements. Only orders that have been verified and signed off by the shipping representative can be loaded for shipment.
- 5.4.2 Activities related to shipping and delivery operations are regulated by Procedure [QOP-75-06](#), Packaging, Labeling and Shipping.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-75-01](#): Production Control
- Operational Procedure [QOP-75-03](#): Product Identification and Traceability
- Operational Procedure [QOP-75-04](#): Product Handling and Preservation
- Operational Procedure [QOP-75-05](#): Storage Areas
- Operational Procedure [QOP-75-06](#): Packaging, Labeling and Shipping
- Operational Procedure [QOP-74-03](#): Verification of Purchased Product
- Operational Procedure [QOP-82-04](#): In-process Inspections
- Operational Procedure [QOP-82-05](#): Final Inspection
- Operational Procedure [QOP-83-01](#): Control of Nonconforming Product
- Nonconforming Report [Form 83-01-1](#)

## PRODUCT REALIZATION

Section 7.6

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Section Page 1

**Measuring and Monitoring Equipment****GENERAL POLICY**

*Airtronics, Inc. measuring and monitoring instruments are maintained and selected to ensure that measurement capability is consistent with the measurement requirements. Equipment used for assuring product conformity is calibrated using calibration standards traceable to the national standard. Calibration status of measuring equipment is identified with calibration stickers. Measuring equipment is properly maintained and its placement and use are controlled.*

**PROCEDURAL POLICIES****1. Controlled and uncontrolled equipment**

- 1.1 The scope of the calibration control system extends to the measuring and test equipment used for:
- Setup and monitoring of production processes;
  - Monitoring of environmental conditions;
  - Verification of product conformity; and
  - Operations where defined accuracy of a measurement is required to assure product conformity.
- 1.2 Equipment used for other purposes may be exempted from calibration. Such equipment is labeled with stickers warning that it is not calibrated. Uncontrolled measuring equipment is prohibited in QA inspection areas.

**2. Measurement identification and selection of equipment**

- 2.1 Identification of measurements to be made and the tolerance of the measured characteristics are documented in product drawings and specifications.

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## Measuring and Monitoring Equipment

- 2.2 Gauges, instruments and other measuring and monitoring equipment are selected on the basis of their capability to provide the necessary accuracy of the measurement. Production is responsible for selecting appropriate measuring and monitoring equipment.

Customer supplied equipment and personally owned equipment used to provide evidence of product conformity is subject to the requirements of Airtronics measuring and monitoring program.

### 3. Equipment calibration and maintenance

- 3.1 Quality Assurance is responsible for calibrating and maintaining measuring and monitoring equipment. All active equipment is inventoried in a controlled list, indicating details of equipment type, unique identification, location, frequency of checks, check method, and acceptance criteria.
- 3.2 A recall method is in place to ensure equipment requiring calibration is done when required.
- 3.2 Measuring equipment is calibrated using written instructions, unless calibration is simple and obvious which may be adjusted or readjusted. Only calibration instruments and standards having known relationship to the nationally recognized standards are used for calibrating measuring and test equipment.
- 3.4 Calibrated equipment is safeguarded from adjustments that would invalidate measurement results and protected from damage and deterioration during handling, maintenance and storage.
- 3.3 Airtronics ensures that environmental conditions are suitable for the calibrations, inspections, measurements and tests being performed.
- 3.4 Calibration is recorded in a calibration certificate and the calibrated equipment is labeled with a calibration sticker.
- 3.5 Calibration-related activities are regulated by Procedure [QOP-76-01](#), Measuring and Monitoring Equipment.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-76-01](#): Measuring and Monitoring Equipment

**Planning of Monitoring and Measurement****GENERAL POLICY**

*Monitoring and Measurement, analysis and improvement process activities required to assure conformity to [product requirements](#), and to achieve improvement, are planned and defined. When applicable, techniques are used for analyzing measurement data.*

**PROCEDURAL POLICIES****1. Planning**

- 1.1 Measurement and monitoring activities to assure and verify conformity to [product requirements](#) are defined in specifications and drawings, production work orders, inspection and testing procedures and process control procedures. These activities are further defined in this manual in [Section 8.2](#), Measurement and Monitoring and in several operational procedures referenced at the end of this section.
- 1.2 The effectiveness of the quality system is monitored by internal audits and by measuring quality performance and customer satisfaction. Results of these activities are reported to the Top Management and are used to identify opportunities for improvement. Activities related to internal audits, measuring customer satisfaction and quality performance are further defined in this manual in [Section 8.2](#).

**2. Statistical techniques**

- 2.1 Statistical techniques may be applied to:
- [Design verification \(e.g., reliability, maintainability, safety\)](#)
  - [Process control](#)
    - [Selection and inspection of key characteristics](#)
    - [Process capability measurements](#)
    - [Statistical process control \(SPC\)](#)
    - [Design of experiments](#)

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## Planning of Monitoring and Measurement

- [Inspection](#)
  - [Failure mode effect and criticality analysis](#)
  - Plan for inspections and testing;
  - Evaluation of measurement systems;
  - Analysis of quality performance and other company-level data.
- 2.2 Department representatives are responsible for identifying the need for techniques in their departments and in other activities for which they are responsible. Quality Assurance may be called upon to assist other departments in selecting and documenting specific techniques.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-82-01](#): Customer Satisfaction
- Operational Procedure [QOP-82-02](#): Internal Audit
- Operational Procedure [QOP-82-04](#): In-process Inspections
- Operational Procedure [QOP-82-05](#): Final Inspection
- Operational Procedure [QOP-74-03](#): Verification of Purchased Product

MEASUREMENT, ANALYSIS AND IMPROVEMENT

Section 8.2

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Section Page 1


**Monitoring and Measurement**

**GENERAL POLICY**

*Customer satisfaction is the principal objective of the quality system and the level of customer satisfaction is the most important measure of the effectiveness of the system. Customer satisfaction is measured by collecting and analyzing direct customer feedback, and by measuring secondary indicators of customer satisfaction. Customer satisfaction data is used by the Top Management to identify opportunities and priorities for improvement.*

*All activities and areas relevant to the quality system are audited at least once a year. Audits are scheduled on the basis of the status and importance of the activity. Certified internal auditors are directly responsible for all the audited activity. Identified nonconforming conditions are brought to the attention of the responsible representatives and corrective/preventive actions are implemented in response to audit findings.*

*Quality system processes are monitored to ensure that they achieve planned results. Relevant product characteristics are measured through inspections, tests and other product verification activities, as specified in control plans. Evidence of product conformity is recorded. Products are released for delivery only after all specified activities have been satisfactorily completed and verified.*

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## Monitoring and Measurement

### PROCEDURAL POLICIES

#### 1. CUSTOMER SATISFACTION

##### 1.1 General

1.1.1 Top Management is responsible for developing suitable indicators of customer satisfaction (product returns and government contracts) and for collecting and analyzing the pertinent information.

1.1.2 Information and data pertaining to customer satisfaction may be collected from several sources, including but not limited to:

- Product conformity (As provided by customer)
- On-time delivery performance (As provided by customer)
- Customer complaints (As reported to Airtronics)
- Corrective action requests (As provided by customer)
- Customer feedback (as applicable from government sources),
- Awards and recognitions,
- Product returns and warranty claims,
- Repeat customers (government sources)

1.1.3 Operational Procedure [QOP-82-01](#), Customer Satisfaction, defines the system for collecting and analyzing the pertinent information and data for reporting results to the Top Management. [Improvement plans are in place to address any deficiencies identified and assess the effectiveness of the results of actions taken.](#)

##### 1.2 Customer feedback

1.2.1 Customer complaints, spontaneous expressions of satisfaction and other unsolicited customer feedback are collected and addressed to Top Management. These activities are defined in Operational Procedure [QOP-72-03](#), Customer Feedback and Complaints. The resulting data is analyzed by Top Management, is presented and discussed at management review meetings.

## Monitoring and Measurement

### 1.3 Awards and recognitions

- 1.3.1 Airtronics, Inc. also encourages customers to participate in customer's award and recognition programs. These recognitions are considered as an important input into determining customer satisfaction.

### 1.4 Product returns and warranty claims

- 1.4.1 Information about the rate of product returns and warranty claims is extracted from quality and servicing records. Results and trends are reported and analyzed at management review meetings.

## 2. INTERNAL AUDIT

### 2.1 Planning and scheduling

- 2.1.1 Quality Assurance Manager establishes an internal audit plan and schedule in accordance with Procedure [QOP-82-02](#), Internal Quality Audits. Every activity and area is audited at least once a year. Selected activities are audited more frequently, depending on their importance and quality performance history.

### 2.2 Audit team and preparation for audit

- 2.2.1 Only certified auditors are assigned to conduct internal audits. Normally, Quality Assurance Manager leads the audit team.
- 2.2.2 Auditors prepare for audits by reviewing applicable standards, procedures, analyzing quality records and establishing checklists. Selection of auditors and preparation for the audit are explained in Procedure [QOP-82-02](#), Internal Quality Audits.

### 2.3 Conducting the audit

- 2.3.1 Conducting the audit, certified auditors seek objective evidence indicating whether the audited activities comply with the requirements of the documented quality system, AS 9100 and whether the quality system is effective. The evidence is collected by observing activities, interviewing personnel and examining records.
- 2.3.2 Nonconforming conditions are documented and recorded using the audit form. A model of the form is provided in Procedure [QOP-82-02](#).
- 2.3.3 Audits are conducted in a way that minimizes disruption of the audited activities.

## Monitoring and Measurement

### 2.4 Corrective action and follow up

- 2.4.1 When nonconforming conditions are identified, the management responsible for the affected area or activity is requested to propose and implement **any necessary corrections and that any corrective actions are taken without undue delay to eliminate detected nonconformities and their causes**. Implementation and effectiveness of the action are verified by a follow-up audit. The audit report form is used for monitoring and recording the implementation of the corrective actions.

### 2.5 Reporting

- 2.5.1 When the auditing cycle is completed, all nonconformity reports established during the cycle are compiled and analyzed, and are presented at the management review meeting. **Records of the audits and their results are maintained**

## 3. MONITORING OF QUALITY SYSTEM PROCESSES

### 3.1 Process monitoring

- 3.1.1 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;
- Monitoring trends in corrective and preventive action requests;
- Analyzing product conformity and other quality performance data and trends;
- Measuring and monitoring customer satisfaction;

### 3.2 Response actions

- 3.2.1 When a quality system process does not conform with requirements quality assurance will;

- **Take appropriate action to correct the nonconformance process.**
- **Evaluate whether the process nonconformity has resulted in product nonconformity**

## Monitoring and Measurement

- 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](#), Control of Nonconforming Product.
- Quality may request the representative responsible for the process to implement a corrective action, in accordance with Operational Procedure [QOP-85-02](#), Corrective and Preventive Action.

### 4. MONITORING AND MEASUREMENT OF PRODUCT

#### 4.1 Product verification

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

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 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)

Documents defining the inspection and testing program for a product are collectively referred to as control plans. [Section 7.1](#) of this manual defines the process for establishing control plans.

## Monitoring and Measurement

- 4.1.2 Verification of purchased material: Purchased material is subjected to a visual inspection by the receiving clerk and QA inspection. [When appropriate, quality assurance utilizes statistically valid sampling inspection plans and if required will submit to the customer for approval.](#)

Operational Procedure [QOP-74-03](#), Verification of Purchased Product, sets forward detailed rules for performing receiving and QA inspections.

- 4.1.3 **In-process inspections:** In-process inspections may be in the form of first article inspections, operator or QA inspections. The focus is on defect prevention rather than detection. In-process inspection activities are regulated by Operational Procedures [QOP-82-04](#), In-process Inspections.

- 4.1.4 **Final inspection:** Finished products are subjected to the final QA inspection. Inspectors verify that all specified receiving and in-process inspections have been carried out satisfactorily. Then they perform the remaining inspections and tests necessary to complete the evidence of product conformity. Only products that pass the final inspection can be shipped. Procedure [QOP-82-05](#), Final Inspection, regulates these activities.

### 4.2 Inspection, test and monitoring records

- 4.2.1 Results of inspections and tests are recorded. Instructions for establishing records for specific types of inspections are defined in Operational Procedures [QOP-74-03](#), [QOP-82-04](#), and [QOP-82-05](#). Filing and maintenance of inspection records are regulated by Operational Procedure [QOP-42-03](#), Control of Quality Records.

### 4.3 Product release

- 4.3.1 [When product is released for production use pending completion of all required measurement and monitoring activities it is identified and recorded to allow recall and replacement if it is subsequently found that the product does not meet requirements.](#)

[Records are available that provide evidence of product qualification.](#)

[The release of product and delivery of service to the customer does not proceed until the planned arrangements have been satisfactorily completed, unless otherwise approved by a relevant authority and where applicable, by the customer.](#)

## Monitoring and Measurement

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

Only personnel performing final product inspections and tests have the authority to release products. [The identity of the person authorizing product release is recorded.](#) Operational Procedure [QOP-82-05](#), Final Inspection, defines specific methods for product release.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-82-01](#): Customer Satisfaction
- Operational Procedure [QOP-82-02](#): Internal Quality Audits
- Operational Procedure [QOP-82-04](#): In-process Inspections
- Operational Procedure [QOP-82-05](#): Final Inspection
- Operational Procedure [QOP-74-03](#): Verification of Purchased Product

**Control of Nonconforming Product****GENERAL POLICY**

*Airtronics ensures that product that does not conform to product requirements is identified and controlled to prevent its unintended use or delivery. A documented procedure is established that defines the controls and related responsibilities and authorities relating to nonconforming product. Product returned from that customer is subject to the requirements of our nonconforming product procedures. Repaired or reworked products are reinspected. Appropriate actions are taken when product nonconformity is identified after delivery. When appropriate, corrective and preventive actions are implemented to prevent recurrence of identified nonconformities.*

**PROCEDURAL POLICIES****1. Identification and documentation**

1.1 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.

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## Control of Nonconforming Product

- 1.2 Airtronics, Inc. identifies and documents all product/material nonconformities. Product/material nonconformity records are invaluable for tracking performance and trends and for identifying areas where corrective or preventive actions should be implemented.
- 1.3 Nonconforming products/material are documented using a nonconformity report. It describes the nonconformity, documents the disposition decision and records close-out of follow-up activities (reinspection, concessions, corrective actions, etc.). The use of nonconformity report and its processing are explained in Operational Procedure [QOP-83-01](#), Control of Nonconforming Product.
- 1.4 To prevent nonconforming products/material from being used or shipped, the products are marked with a REJECTED label and are segregated.

### 2. Nonconformity review and disposition

- 2.1 QA inspector and production representative may [review and](#) make the disposition decision for a nonconforming product when it is obvious that the product must be scrapped or when it can be repaired by a simple process without affecting its quality or appearance. In all other cases, Quality Assurance together with Production and, when required, Engineering are responsible for making disposition decisions. [These individuals are qualified to make these decisions based on their professional experience, education, and background.](#)
- 2.2 The disposition decision may be: Rework or repair, return to supplier, use as is or scrap.  
[Dispositions of use-as-is and repair are only used when approved by an authorized representative of Airtronics responsible for design. \(or authorized delegated authority\)](#)
- [If the nonconformity results in departure from the contract requirements, Airtronics will not disposition product unless specifically authorized by the customer.](#)
- [Product dispositioned as scrap will be conspicuously and permanently marked or positively controlled until physically rendered unusable.](#)
- 2.3 Detailed rules for nonconformity review, for making the disposition decision, and for recording these activities are provided in Operational Procedure [QOP-83-01](#), Control of Nonconforming Product.

## Control of Nonconforming Product

### 3. Re-verification of repaired or reworked product

- 3.1 Repaired or reworked products are reinspected in accordance with applicable procedures and applicable specifications (refer to Procedures [QOP-74-03](#), Verification of Purchased Product; [QOP-82-04](#), In-process Inspections; or [QOP-82-05](#), Final Inspection, as applicable).

### 4. Product returns and recalls

- 4.1 [When product nonconformity that is detected by the customer after delivery](#) or use has started, the customer is instructed to return the product depending on its warranty status or responsibility for the nonconformance.
- 4.2 [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. Only the Top Management or QA Manager is authorized to make recall decisions.

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-83-01](#): Control of Nonconforming Product
- Operational Procedure [QOP-74-03](#): Verification of Purchased Product
- Operational Procedure [QOP-82-04](#): In-process Inspections
- Operational Procedure [QOP-82-05](#): Final Inspection

**Analysis of Data****GENERAL POLICY**

*Airtronics Inc. complies and reviews information, data required for evaluating the suitability and effectiveness of the quality system and for identifying opportunities for continual improvement.*

**PROCEDURAL POLICIES****1. General**

- 1.1 Data and information recorded in quality records are compiled and reviewed periodically to determine trends in the performance and effectiveness of the quality system and to identify opportunities for improvement.
- 1.2 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.

**2. Scope**

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 should be presented would include:

- Information for continual improvement
- Conformity to product requirements
- Characteristics and trends of processes and products
- Corrective and preventive actions
- Supplier performance

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## Analysis of Data

- Customer satisfaction
  - Effectiveness of training
- 2.1 Characteristics of processes and products:
- Process performance — Quality reviews work orders on a daily basis for conformity to Procedure [QOP-75-01](#).
  - Cycle times — Are reviewed by production and quality based on work order information per Procedure [QOP-75-01](#).
- 2.2 Conformity to product and customer requirements:
- CNR, rework or repair rates (including cost) recorded on work orders or product nonconformity report (Procedure [QOP-83-01](#)).
  - Corrective/Preventive action, including risk. ([QOP85-02](#))
  - Quality Inspection daily of work orders.
- 2.3 Suppliers:
- Supplier quality performance — (Procedure [QOP-74-01](#)).
  - Quality Inspection daily at receiving.
- 2.4 Customer satisfaction and dissatisfaction: (Reviewed by top management)
- Customer satisfaction levels — (Procedure [QOP-82-01](#)).
  - Customer complaints — (Procedure [QOP-62-03](#)).
- 2.5 Quality System: (Evaluated thru quality monitoring of corrective actions)
- Effectiveness of training — (Procedure [QOP-62-01](#)).
  - Effectiveness of quality system — (Procedure [QOP-82-02](#)).
- 2.6 The analysis of data shall provide information relating to characteristics and trends of processes and products including opportunities for preventive action.
-

## Analysis of Data

### ASSOCIATED DOCUMENTS

- Operational Procedure [QOP-56-01](#): Management Review
- Operational Procedure [QOP-62-01](#): Training and Awareness
- Operational Procedure [QOP-72-03](#): Customer Feedback and Control
- Operational Procedure [QOP-74-01](#): Supplier Evaluation
- Operational Procedure [QOP-75-01](#): Production Control
- Operational Procedure [QOP-82-01](#): Customer Satisfaction
- Operational Procedure [QOP-82-02](#): Internal Quality Audits
- Operational Procedure [QOP-83-01](#): Control of Nonconforming Product
- Operational Procedure [QOP-85-01](#): Continual Improvement
- Operational Procedure [QOP-85-02](#): Corrective and Preventive Action

**Continual Improvement****GENERAL POLICY**

*Airtronics Inc. deploys continual improvement philosophy throughout the entire organization. The improvement effort is driven by goals defined in the quality policy and quality objectives. Improvement opportunities are identified by analyzing quality performance data and information. Improvement projects are defined and implemented through the system of corrective and preventive actions and management review actions.*

*Causes of identified nonconformities are investigated and, where appropriate, corrective actions are implemented to ensure that nonconformities do not reoccur. Preventive actions are implemented to eliminate the causes of **potential nonconformities**. Corrective and preventive actions taken are recorded and are followed up to ensure that they have been properly implemented and that they are effective.*

**PROCEDURAL POLICIES****1. CONTINUAL IMPROVEMENT****1.1 Opportunities for improvement**

- 1.1.1 The organization shall continually improve 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.
- 1.1.2 Quality performance is determined by analyzing information about customer satisfaction, records of product and process nonconformity, results of internal audits, and other data and information relevant to quality performance. Section [8.4](#), Analysis of Data, defines the scope and system for collecting and analyzing such information.
- 1.1.3 Quality performance is evaluated by management reviews of the quality system. Where quality performance falls short of a defined objective, the management review identifies specific improvement actions to reach the objective.
- 1.1.4 This process of facilitating continual improvement through the use of quality policy,

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## Continual Improvement

objectives, and analysis of data, is defined in Operational Procedures [QOP-85-01](#), Continual Improvement, and [QOP-56-01](#), Management Review.

- 1.1.5 In addition to management reviews, departmental representatives identify improvement opportunities continually, based on feedback from their operations and other activities. Employees are also encouraged to come forward with ideas for improving products, processes, systems, productivity, and working environment. These improvement opportunities are evaluated by Quality Assurance and, where appropriate, are implemented through the system of corrective and preventive actions.

### 1.2 Implementation of improvement

- 1.2.1 Improvements are usually implemented through management review actions and through corrective and preventive actions. 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.](#)

## 2. CORRECTIVE AND PREVENTIVE ACTION

### 2.1 Preventive versus corrective action

- 2.1.1 Preventive actions are requested and implemented when there are trends of decreasing quality capability and/or effectiveness of the quality system that create a [risk for a potential nonconformity](#). Corrective actions are used when an actual nonconformity is identified.
- 2.1.2 Recognizing this difference, Airtronics Inc. has separate systems for identifying the need for corrective and preventive actions. However, once the need is identified, a common system is used to process both types of actions. Forms, logs and other documents and records for processing of corrective and preventive actions are the same.

## Continual Improvement

### 2.2 Corrective action

2.2.1 Airtronics has documented procedure that defines the 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..](#)

2.2.1 The need for corrective action is determined on the basis of identified actual nonconformities. Corrective action requests are typically triggered by such events as a failed inspection, customer complaint and/or product return, nonconforming delivery from a supplier, or a quality system audit finding.

### 2.3 Preventive action

2.3.1 Airtronics has documented procedure that defines the 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.
-

## Continual Improvement

- 2.3.1 The need for preventive action is determined on the basis of information and data regarding capability and performance of processes, product nonconformity rates, customer complaints and quality system audit findings.  
*Risk analysis is considered and integral part of the preventive action system. (Identifying potential non-conformances are considered identification of potential risk). Other preventive action opportunities may include, error proofing and information on product problems reported by external sources.* Such information and data are collected and analyzed to detect unfavorable trends that, if not checked, will increase the risk of nonconformities. The system for collecting and analyzing quality performance information and data is defined in Section [8.4](#) of this manual.

### 2.4 Processing of corrective and preventive action

- 2.4.1 Preventive and corrective actions are initiated, processed and followed up using a NCR (Nonconforming Report Form [83-01-1](#)). The form documents the unsatisfactory condition and the corrective or preventive action to be taken, and is used to record the verification and closure of the action. Open NCRs are reviewed regularly to ensure that the actions are implemented and followed up in a timely manner. Corrective actions are elevated to top management if they are not responded to in a timely and /or ineffective manner. Procedure [QOP-85-02](#), Corrective and Preventive Action, explains how to use the NCR system.
- 2.4.2 Continual improvement actions are often defined as corrective and preventive actions. This is especially true for preventive actions. Operational Procedures [QOP-85-01](#), Continual Improvement, and [QOP-56-01](#), Management Reviews, explain how the corrective and preventive action system is used for facilitating continual improvement.

### ASSOCIATED SECTIONS AND DOCUMENTS

- Form [53-01-1](#): Nonconforming Report
- Operational Procedure [QOP-85-01](#): Continual Improvement
- Operational Procedure [QOP-85-02](#): Corrective and Preventive Action
- Operational Procedure [QOP-56-01](#): Management Review