

# QUALITY SYSTEMS MANUAL

## INTRODUCTION

### **General**

This quality manual addresses the requirements of the ISO 9001: 2000 Standard. The content of this manual applies to:

Roberts Automatic Products Inc.  
880 Lake Drive  
Chanhassen MN. 55317-9325

Roberts Automatic Products Inc. was founded by Glen Roberts in 1947, a pioneer in the Minneapolis screw machine industry and is now in its third generation as a family held corporation owned entirely by the Roberts family. There is also a board of directors, with three members from outside the Roberts family, who advise and assist the senior management of the company.

Since our inception we have been a leading supplier of quality, precision production machining. Today, the third generation of the Roberts family is dedicated to a high level of quality, service and productivity. At Roberts we specialize in precise and complex screw machine parts, CNC turning and machining cell work, and secondary operations. Roberts Automatic has grown and prospered for over fifty years due in part to solid values of both the owners and employees of the company. These values are the framework that we have built the business on. Our values are detailed in the six statements below.

### **Roberts' Values**

- Committed to providing products and services that exceed our customer's expectations in both quality and value.
- Committed to our most valuable resource, our people, by providing the proper training, and a comfortable, clean, safe working environment.
- Committed to a program of continuous improvement by providing an environment, which encourages active participation and involvement.
- Committed to establishing partnerships with our customers and suppliers to help ensure mutual prosperity and stability.
- Committed to profitable long-term growth and expansion to provide continuing opportunities and challenges to all of us.
- Committed to social responsibility through community involvement and environmental awareness.

Roberts Automatic Products, Inc. responds to the importance of research and development by constantly monitoring the operation of their machines and their customer's comments. This stimulates new ideas for improving the efficiency and safety of all of their production.

In continuing to ensure we have competent, well-trained employees, Roberts Automatic Products, Inc. works with the local high school to develop cooperative programs for the students and teachers encouraging interest in the industry. Also providing employees with ongoing training, clean, safe working environment, and encouraging active participation and involvement.

The President of the company approves the quality manual.

The quality manual is stored electronically and is password protected. The file has a write-protected status and can only be modified by the Quality Assurance Coordinator or his delegate.

The quality manual can be issued as either a controlled or uncontrolled document.

Controlled copies are recorded on the Document Distribution form (DOCU-4002) and updated through the issue of revisions. The Quality Assurance Coordinator maintains the distribution form. Uncontrolled copies are not recorded or updated.

This manual is Roberts' description of our quality management system. It serves as the primary reference document for controlling quality-related activities. The quality management system is documented in this manual containing three introductory sections 1 to 3 and numbered Sections 4 to 8 relating to the corresponding sections described in the ISO 9001:2000 Standard. It provides a description of the philosophy of quality and a structure from which all other actions and methods will be accomplished in regard to the quality of our products and services. This document alone does not guarantee an effective quality management system, however, our people interacting with quality concepts and methods will provide a system of quality that is dynamic and founded on continually improving the way we do business. Roberts Quality Steering Team (QST) approves all concepts and principles in this manual. Assignments are made relative to ownership of specific sections of the quality system. Overall responsibility for effective implementation of the quality system is assigned to the Management Representative.

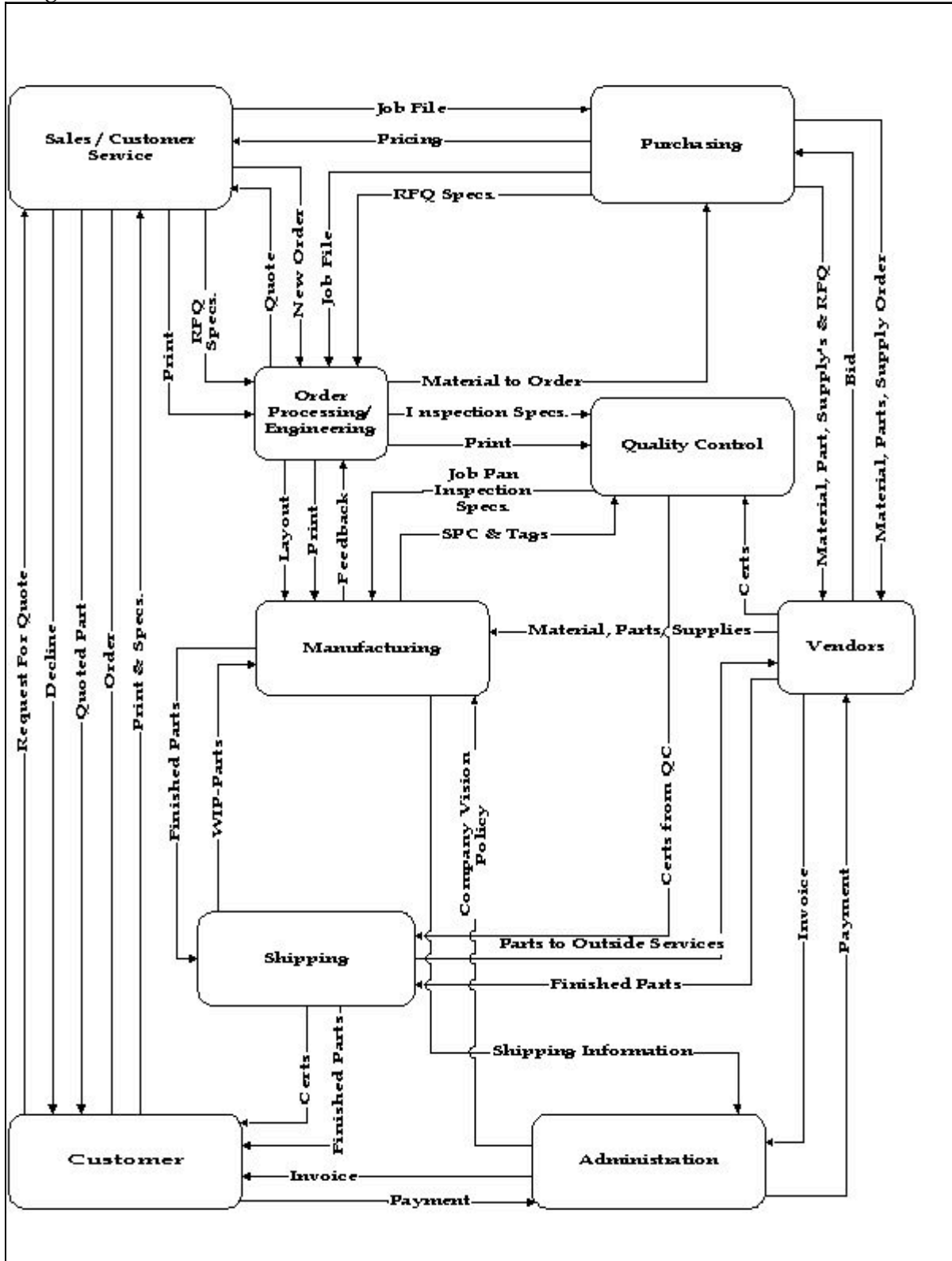
This manual is available online or as a hard copy to our employees, customers and suppliers. The concepts contained herein are an explanation as to how Roberts manages quality. The practical implementation is contained in our Level II procedures and Level III Work Instructions and herein is accessible on our Shared documents system. Roberts's Quality Management System is designed to comply with all sections of ISO 9001:2000 Standard.

Operating Procedures (Level II), Work Instructions (Level III), and Forms (Level IV) may be identified and referenced within the quality manual. All Documents are listed on the Master Document Index (DOCU-4000).

### **Roberts' QMS Flow Chart**

The following model is a representation of Roberts's Quality Management System. It is provided here as a visual description of the Interactive Key

Processes that Roberts used to develop figure 2: Roberts QMS Interrelationship Diagrams.



**Roberts' Business Description**

Roberts Automatic Products, Inc. is a closely held corporation owned entirely by

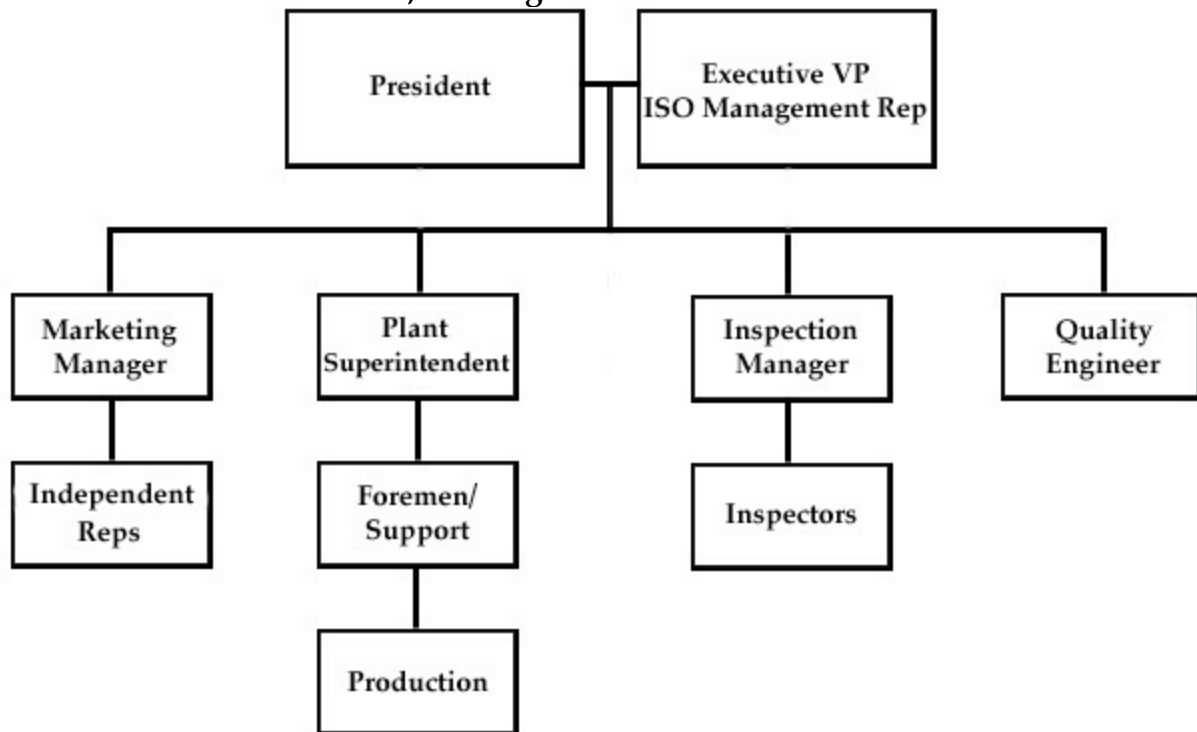
the Roberts family, with the third generation now active in the management of the business. There is also a board of directors, with three members from outside the Roberts family, who advise and assist the senior management of the Company.

Roberts Automatic Products, Inc. is a precision production machine shop; that is, we produce large quantities of precision parts using automatic screw machines, CNC machines and other related metal cutting or machining equipment for a wide variety of manufacturers and distributors. Roberts is a contract manufacturer because we make these parts on a contract or job basis only and do not make parts or products of our own. We estimate cost and delivery of each part we would like to make, usually in competition with two or more other job shops. Experience, technical knowledge of metals and machining, and a reputation for reliable delivery of high quality parts are important assets of Roberts Automatic Products. These have allowed the company to succeed and grow, providing steady employment, good benefits, and a gain sharing plan for our employees. We believe that our success depends greatly upon our ability to provide a quality product, and to that end, have developed the quality process described in this quality system manual.

### Roberts' Mission statement

"Roberts Automatic Products is a world-class precision production machining company providing superior value to our customers through quality, productivity and innovation."

### Roberts Automatic Products, Inc. Organization



## QUALITY MANUAL QMS FOUNDATION

If appropriate, following each section of the Quality Systems Manual is a listing of applicable documented procedures for implementation of ROBERTS QMS. This Quality Manual and supporting documentation will be revised as necessary.

## TERMS AND DEFINITIONS

Acceptance Criteria	Defined limits placed on characteristics, materials, products or services.
Audit	A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.
Blue Tag	A tag used to identify non-conforming parts returned by customer.
Calibration	Comparison and/or adjustment to a standard of known accuracy.
Conformance	Compliance with specified requirements.
Control	To exercise authority over and regulate.
Control Feature	A documented activity to ensure conformance with specific requirements.
Corrective Action	Measures taken to rectify conditions adverse to quality and to minimize recurrence.
CPI	A Form used to document Corrective, Preventive and Improvement plans.
Documentation	Recorded information.
Effect	The non-fulfillment of intended requirements.
Failure	Any condition which prevents the product or service from meeting specifications.
Finding	Objective evidence that a control feature of the approved quality program was not implemented.
Grade	An indicator of category or rank related to features or characteristics that cover different sets of needs for products or services intended for the same functional use.
Inspection	Activities such as measuring, examining, testing, gauging one or more characteristics of a product or service and comparing these with specified requirements to determine conformity.

Job Work Instructions	A document that provides detailed "how to" instructions to accomplish a task.
Non-conformity	The non-fulfillment of requirements.
Objective Evidence	Data supporting the existence of.
Observation	Evidence that a surveyable / auditable element exists which is not contrary to documented requirements but may warrant further qualification or improvement.
Operating Procedure (OP)	A document that specifies or describes how an activity is to be performed. It may include methods to be used, equipment to be used and sequence of operations.
Product Realization	The planning and manufacture of parts per customer requirements.
Quality	Conformance to requirements.
Quality Assurance	All those planned and systematic actions necessary to provide adequate confidence that a product or service will satisfy given requirements for quality.
Quality Control	The operational techniques and activities that are used to fulfill requirements for quality.
Quality System	The organizational structure, responsibilities, procedures, processes and resources for implementing the Roberts total management system.
Quality System Review	Top management performs a formal evaluation of the status and adequacy of the quality system in relation to the quality policy and new objectives resulting from changing circumstances.
Red Tag	A tag used to identify and trace non-conforming product produced and identified within the facility.
Routing	A description of operations to be performed including the order and location where they are performed.
Servicing	Supplier activities at the interface with a customer and the results of all supplier activities to meet the customer needs.
Supplier	Any individual or organization that furnishes materials, products or services.
Specification	A document that prescribes the requirements with which the Roberts product or service has to conform.

Traceability	The ability to trace the history, application or location of an item or activity, or similar items or activities, by means of recorded identification.
Vendor	Any individual or organization that furnishes materials, products or services to Roberts.
Verify	To determine conformance to specified requirements.

## QUALITY MANAGEMENT SYSTEM

### General Requirements

ROBERTS has defined and manages processes necessary to ensure that products conform to customer requirements. As a means of implementing and demonstrating the defined processes, ROBERTS has established, documented, implemented, maintains and periodically improves the effectiveness of the QMS. The QMS is developed to comply with the requirements of ISO 9001:2000 and is composed of the following:

- A. Quality management system processes, and how they are used in the organization.
- B. The interaction of these processes.
- C. How we determine these processes are effective.
- D. What resources are available to support these processes.
- E. How we keep track of and measure these processes.
- F. How we take action to achieve results and continuous improvement.

We ensure control of all outside processes that affect product conformity.

Several process steps for product realization are outsourced. These process providers are selected, evaluated and controlled according to practices determined by the Purchasing Department and Quality Assurance (see 7.4 and 8.2.3).

#### Reference

- PURC-2000 Purchasing Operating Procedure
- QUAL-2000 Management Review Operating Procedures
- QUAL-2003 Monitoring and Measurement of Product Operating Procedure
- QUAL-2012 Planning Operating Procedure

### Documentation Requirements

The QMS documentation includes:

- A. Documented statements of quality policy and objectives;
- B. This Quality Manual;
- C. Documented procedures where required by ISO 9001: 2000 and the needs of the business:

- D. Documents needed for effective planning, operation and control of processes, and
- E. Quality records where required by ISO 9001: 2000 and the needs of the business.

#### Reference

- DOCU-2000 Control of Documents Operating Procedures
- DOCU-2001 Control Of Records Operating Procedure

### **Quality Manual**

Roberts is responsible for preparation and maintenance of this quality manual. The Quality Management System is designed to comply with all sections of ISO 9001: 2000, with the exception of section 7.3 Design and Development. Since design of all Roberts's products rests with the customer, we do not have any design responsibility.

The quality manual includes:

- A. A description of the elements of the QMS Flow Chart and their interaction.
- B. Key Process Interrelationship
- C. Roberts Quality Policy;
- D. References to system level procedures;
- E. Organizational Chart;

#### Reference

- QUAL-1000 QUALITY SYSTEMS MANUAL

### **Control of Documents**

ROBERTS has documented a system level procedure for controlling new and revised documents required for the operation of the QMS. The quality system procedure ensures that:

- A. Documents are approved for adequacy prior to release.
- B. Documents are reviewed, approved, updated and re-approved as necessary.
- C. The relevant versions of documents are available at all locations where activities essential to the effective functioning of the quality operating system and process are performed. Changes are identified within controlled documents.
- D. Obsolete documents are removed from all points of issue or use, or are otherwise controlled to prevent unintended use.
- E. Any obsolete documents retained for legal or knowledge preservation purposes are suitably identified and stored.
- F. Applicable documents of external origin are identified, controlled and recorded.

A Master list (DOCU-4000) of all documents is maintained. The list identifies current revision status of documents, and is used to preclude the use of invalid and/or obsolete documents.

Documentation is legible, readily identifiable, and readily retrievable.

NOTE: Documentation is in the form of paper, electronic FILE (s), and industrial publications.

Reference

- DOCU-2000 Control of Documents Operating Procedures

### **Control of Quality Records**

Quality records (DOCU-4004) are documents specifically defined by ROBERTS. Quality records are maintained to demonstrate conformance to requirements and effective operation of the QMS.

ROBERTS has documented a system level procedure (DOCU-2001) for record identification, collection, protection, indexing, accessing, filing, storage, retrieval, retention time and disposition.

Reference

- DOCU-2000 Control of Documents Operating Procedures
- DOCU-2001 Control Of Records Operating Procedure

## **MANAGEMENT COMMITMENT**

### **General**

Roberts's Management is committed to the development and implementation of the Quality Management System and continues to improve effectiveness by:

- A. Communicating to the organization the importance of meeting customer as well as statutory and regulatory requirements.
- B. Establishing the Quality Policy.
- C. Ensuring that quality objectives are established.
- D. Conducting management reviews, and
- E. Ensuring the availability of resources.

Roberts demonstrates, through its internal systems, that customer needs and expectations have been determined and translated into applicable customer requirements.

Reference

- QUAL-2000 Management Review Operating Procedures

**Customer Focus**

Roberts determines customer needs and requirements and converts them into the form of defined requirements with the goal of achieving customer confidence in ROBERTS' products. Roberts ensures that defined requirements are fully understood and met.

## Reference

- QUAL-2012 Planning Operating Procedure

**Quality Policy**

Roberts has established its policy for quality and ensures it:

- A. Is appropriate for the needs and expectations, of Customers; of ROBERTS, and it's vendors.
- B. Includes commitment to a process for continual improvement of the QMS;
- C. Meets quality objective of Roberts;
- D. Has determined the processes and responsibilities required to reach the quality objectives.
- E. Determines and provides the required resources to meet or exceed the quality objectives.
- F. Has metrics to measure efficiency and output quality of every process.
- G. Applies the metrics to improve the quality and efficiency of each process.
- H. Uses the above methods to prevent nonconformities and eliminate their root causes.
- I. Is communicated, understood and implemented throughout the organization
- J. Is regularly reviewed for continuing suitability.

"We will meet or exceed customer requirements and expectations while providing a valuable product that creates an acceptable return on investment for Roberts. We will strive to continuously improve our processes, thus enhancing customer satisfaction."

**Quality Objectives**

ROBERTS has established corporate quality objectives, which have been deployed throughout the organization. The quality objectives are consistent with the quality policy and the commitment to continual improvement. Quality objectives include those needed to meet requirements of ROBERTS' products and processes as well as customer requirements.

**QMS Planning**

ROBERTS has identified and defined the activities and resources needed to achieve quality objectives and to meet customer requirements. Planning is consistent with other requirements of the QMS and the results are documented.

Planning covers the following issues:

- A. The processes required in the QMS;
- B. The realization processes and resources needed, identifying quality

- characteristics at different stages, to achieve desired results;
- C. Verification activities, criteria for acceptability and the quality records needed.

Planning ensures that organizational change is conducted in a controlled manner and that the integrity of the QMS is maintained during such change(s).

Reference

- QUAL-2012 Planning Operating Procedure

### **Quality Management System**

ROBERTS has established a QMS as a means of meeting its quality policy, achieving its quality objectives and ensuring that product conforms to customer requirements. The Quality Manual and Documented Procedures define the basis of the QMS.

### **Responsibility and Authority**

Roles and their interrelationships, responsibilities and authorities are defined within an organizational chart, job descriptions, and documented procedures and work instructions.

### **Quality Management Representative**

The President appoints a member of Roberts's management as the Quality Management Representative. The Quality Management Representative, irrespective of other duties, has the authority and responsibility to insure the quality system conforms to the requirements of ISO Q9001-2000 and that the quality system is established. The Quality Management Representative is responsible to provide an assessment to the Quality Steering Team on the performance of the quality system and ensures the promotion of awareness of customer requirements throughout the organization.

### **Internal Communication**

ROBERTS has established and maintains a process for internal communication between various levels and functions. Internal communication is currently ensured through open door, email, voice messages, company/employee meetings, and company bulletin board, President's Meeting, Designated Lead Meeting and Department Meetings. Anyone can request a change to the QMS through a Change Request Form (QUAL-4025).

### **Management Review**

ROBERTS has established and maintains a process for Management Review. Roberts, at specified intervals, reviews the QMS to ensure its continuing suitability, adequacy and effectiveness. The review includes evaluation of the need for changes to the QMS, including the quality policy and objectives.

### **Management Review Inputs**

ROBERTS Management Reviews are conducted once per calendar quarter with the intent of determining current performance and improvement opportunities related to:

- A. Follow-up from Last Mgmt Review
- B. Results of Internal Audits
- C. Customer Feedback
- D. Review of Processes and Metrics
- E. Scrap, Salvage, & Rework, and Cost of Quality
- F. Review CARs, PAPs, and IMPs
- G. Quality Policy and Objectives
- H. Review SCARs
  - I. Customer Requirements
  - J. Overall assessment of Roberts Quality System and Quality Manual
- K. Summary of Improvements

### **Management Review Outputs**

The outputs from Management Reviews include actions and decisions related to:

- A. Improvement of the QMS;
- B. Process and product analysis and / or improvement;
- C. Resource needs.

Records of Management Reviews are maintained.

Reference

- QUAL-2000 Management Review Operating Procedures

## **RESOURCE MANAGEMENT**

### **Provision of Resources**

ROBERTS determines and provides, in a timely manner, resources needed to establish, maintain and improve the effectiveness of the QMS. Such resources are applied to the managing of organizations, processes and projects to enhance customer satisfaction by meeting customer requirements. The QST will review audits and open action items to determine what resources are required and where they can be obtained.

Reference

- HRES-2001 Resource Management Operating Procedure

### **Assignment of Personnel**

Roberts selects and assigns personnel to ensure that those who have responsibilities defined in the QMS are competent on the basis of applicable education, training, skills and experience.

### **Competence, Training, Qualification and Awareness**

ROBERTS has established and maintains a system level process to:

- A. Determine competency and training needs.
- B. Provide training to address identified needs.
- C. Maintain appropriate records of education, training, skills and experience.
- D. Evaluate the effectiveness of training.

ROBERTS has established and maintains processes to make employees at each relevant function and level aware of:

- A. The importance of conformance with the quality policy, and with the requirements of the QMS.
- B. The significant impact of their work activities on quality, actual or potential.
- C. Their roles and responsibilities in achieving conformance with the quality policy and procedures and with the requirements of the QMS.
- D. The potential consequences of departure from specified procedures.

### **Infrastructure**

ROBERTS defines, provides and maintains the infrastructure needed to ensure the conformity of product through the planning process. Consideration of these factors is identified during the product and process planning stage.

These include:

- A. Work space and associated facilities / utilities.
- B. Equipment, hardware and software.
- C. Suitable maintenance.
- D. Supporting services such as shipping, transportation and communication.

#### Reference

- HRES-2001 Resource Management Operating Procedure

### **Work Environment**

ROBERTS has defined and implemented those human and physical factors of the work environment needed to achieve conformity of product. Consideration of these factors is identified during the product and process planning stage. This includes:

- A. Health and safety conditions
- B. Work methods.
- C. Work ethics.

#### Reference

- HRES-2001 Resource Management Operating Procedure

## **PRODUCTION PROCESS**

### **Planning of Product Realization**

Roberts planning of product realization is consistent with other processes of the QMS. Product realization planning for new products is part of the review process. Customer requirements for quality plans are determined and implemented. Product realization is determined through application of defined work instructions, visual tools and product schedules. During product realization planning the design team takes into consideration the following:

- A. Quality objectives and requirements for the product based on customer specifications or industry standards.
- B. The need to establish processes, work instructions, training and resources specific to the product.
- C. Methods of verification, validation, monitoring, inspection and test activities specific to produce the product as well as acceptance criteria.
- D. Identification of records needed to provide evidence that the realization processes and resulting product fulfill stated requirements.

#### Reference

- QUAL-2003 Monitoring and Measurement of Product Operating Procedure
- QUAL-2012 Planning Operating Procedure

### **Identification of Customer Requirements**

ROBERTS has established and maintains a process for identifying customer requirements. The process considers:

- A. The completeness of customer's product requirements.
- B. Requirements not specified by the customer but necessary for fitness for purpose.
- C. Obligations related to product, including regulatory and legal requirements.
- D. Customer requirements for availability, delivery and support of product.

#### Reference

- QUAL-2012 Planning Operating Procedure

### **Review of Customer Requirements**

Customer requirements, including any requested changes, are reviewed before a commitment to supply a product is made to the customer (e.g. submission of a purchase order, acceptance of a contract or order) to ensure that:

- A. Customer requirements are defined.
- B. Where the customer provides no written statement of requirement, the order requirements are confirmed before acceptance.

- C. Contract or order requirements differing from those previously expressed, e.g. in a purchase order or quotation, are resolved.
- D. ROBERTS has the ability to meet the customer requirements for the product.

The results of reviews and subsequent follow-up actions are recorded.

Reference

- QUAL-2012 Planning Operating Procedure

### **Customer Communication**

ROBERTS has implemented effective liaison with customers, with the aim of meeting customer requirements.

ROBERTS has defined communication requirements relating to:

- A. Product information.
- B. Inquiry and order handling, including amendments.
- C. Customer responses relating to performance of product.
- D. Customer complaints and actions relating to nonconforming product.

The customer's primary contact is the President of Sales and Marketing or the ROBERTS Sales Representative. All above communications requirements can be handled through this method.

When a specific question or problem arises that direct communication with Quality or Engineering is required, the Sales Representative will direct the customer to the appropriate Engineer or Quality Personnel.

When a customer complaint is received, if required, a Customer Corrective Action (CCAR) will be completed. Also the complaint will be documented on the Customer Satisfaction Log. When product is to be returned a Return Material Authorization number will be issued.

### **Process Design and Development**

NOTE: Roberts Automatic Products produces no product of its own and has no design responsibility for the products it produces. Design of the product resides solely with the customer and is communicated through the print specifications. We, therefore, take exception to the requirements of this clause.

### **Purchasing Process**

ROBERTS controls its purchasing processes to ensure purchased product and/or services conform to ROBERTS' requirements. The type and extent of methods to control these processes is dependent on the effect of the purchased product and/or service upon final product.

ROBERTS evaluates and selects suppliers and/or service providers based upon their ability to supply product and/or services in accordance with ROBERTS'

requirements. Evaluation, re-evaluation and selection criteria for suppliers and/or service providers are established. The results of evaluations and subsequent follow-up actions are recorded.

Reference

- PURC-2000 Purchasing Operating Procedure

### **Purchasing Information**

Purchasing documentation contains information clearly describing the product and/or service(s) ordered, including, but not limited to:

- A. Requirements for approval or qualification of product and/or service(s), procedures, processes, equipment and personnel.
- B. Any management system requirements.

ROBERTS reviews and approves purchasing documents for adequacy of the specification of requirements prior to release.

### **Verification of Purchased Product and/or Service(s)**

ROBERTS determines and implements the arrangements necessary for verification of purchased product and/or service(s). Where ROBERTS intends to perform verification at our supplier's premises, such requirements will be designated in the purchasing information.

Reference

- PURC-2000 Purchasing Operating Procedure

### **Control of Production**

ROBERTS plans and controls product through:

- A. The availability of specifications that define the characteristics of the product that is to be achieved.
- B. The availability of clearly understandable work specifications and/or instructions for those activities where they are necessary for the achievement of conformity of product.
- C. The use and maintenance of suitable production equipment.
- D. The provision of suitable working environment.
- E. The availability and use of suitable measuring and monitoring equipment.
- F. The implementation of suitable monitoring and verification activities.
- G. Suitable methods for release and delivery of product.
- H. Activities for return and customer claims.

Reference

- MANU-2001 Process Control Operating Procedure
- QUAL-2003 Monitoring and Measurement of Product Operating Procedure

**Validation of Processes**

Roberts Automatic performs no process for which validation would be required.

Reference

- MANU-2001 Process Control Operating Procedure

**Identification and Traceability**

The Production Department has developed and maintains documented procedures to ensure the identification of parts, subassemblies, and products are maintained throughout our processes. Documented procedures also exist to identify product status in respect to monitoring and measurement requirements.

Reference

- MANU-2000 Identification and Traceability Operating Procedure
- QUAL-2003 Monitoring and Measurement of Product Operating Procedure

**Customer Property**

ROBERTS manages customer-supplied product (raw materials, components, or gages) as it would its own products. Such product is subject to documented process control procedures. Any customer owned items that are lost, damaged or become unsuitable for use while in the possession of ROBERTS, are recorded and reported to the customer.

Reference

- QUAL-2002 Customer-Property Operating Procedure

**Preservation of Product**

ROBERTS preserves the conformity of product during internal processing and delivery to the customer.

Roberts has established and maintains documented procedures to ensure product is identified, protected and handled and stored correctly throughout all processes from receipt through manufacture to storage and shipment.

Packaging shall meet ROBERTS and customer expectations. Temperature, humidity, and shelf life for materials are included in determining storage and handling methods.

Reference

- MHDL-2000 Material Handling Operating Procedure

**Control of Measuring and Monitoring Devices**

ROBERTS controls, calibrates, maintains, handles and stores applicable measuring and monitoring devices used to demonstrate conformance of product to specified requirements.

ROBERTS provides methods of handling, preservation and storage that protect measuring devices from damage or deterioration.

Measuring, inspection and test equipment is used in a manner, which ensures that measurement uncertainty, including accuracy and precision, is known and is consistent with the required measurement capability.

Software used for the monitoring and measurement of product requirements is confirmed as to its application prior to use.

ROBERTS:

- A. Calibrates and adjusts measuring, inspection and test equipment at specified intervals or prior to use, against equipment traceable to international or national standards. Where no such standards exist, the basis used for calibration is recorded;
- B. Identifies measuring, inspection and test equipment with a suitable indicator or approved identification record to show calibration status.
- C. Determines the method for calibration of measuring and monitoring devices.
- D. Records the results of calibration.
- E. Safeguards measuring, inspection and test equipment from adjustment, which would invalidate the calibration.
- F. Assess the validity of previous inspection and test results when equipment is found to be out of calibration and take appropriate actions.

Reference

- QUAL-2005 Control of Monitoring and Measuring Devices Operating Procedure

## MEASUREMENT, ANALYSIS AND IMPROVEMENT

### General Requirements

ROBERTS has defined, planned and implemented measurement, monitoring, analysis and improvement processes to ensure that the QMS, processes and products conform to requirements.

The type, location, timing and frequency of measurements and the requirements for records are defined.

The effectiveness of measures implemented is periodically evaluated. ROBERTS identifies and uses appropriate statistical tools. The results of data analysis and improvement activities are inputs into the management review process.

Reference

- QUAL-2011 Analysis of Data Operating Procedure

**Customer Satisfaction**

ROBERTS has determined and established processes for measurement of the quality management system performance. Customer satisfaction is used as one measure of the customers' perception of how Roberts has met their requirements and internal audits are used as a tool for evaluating ongoing system compliance.

The methods and measures for obtaining customer satisfaction information and data are:

- A. Yearly Survey e-mailed to customers.
- B. Customer interaction by Sales/Marketing, Quality, Engineering.
- C. Customer complaints, compliments, and concerns (as received) and documented on the Customer Satisfaction Log.
- D. Input from Continual Improvements.

A committee made up of Sales/Marketing and Quality will review the data and track satisfaction of individual customers. Actions necessary to improve Customer Satisfaction will be formulated and assigned to appropriate ROBERTS's personnel.

**Internal Audits**

ROBERTS has established a documented procedure for performing objective audits in order to determine if the QMS has been effectively implemented and maintained and conforms to ROBERTS QMS requirements. In addition, the organization may carry out additional audits to identify potential opportunities for improvement.

ROBERTS audit process, including the schedule, is based on the status and importance of the activities, areas or items to be audited, and the results of previous audits.

The documented procedure for internal audit covers the audit scope, frequency and methodologies, as well as the responsibilities, requirements for conducting audits, recording and reporting results to management. Follow-up activities include verification of corrective actions taken and the reporting of verification results. The management responsible for the area being audited ensures that actions are taken without undue delay to eliminate detected non-conformities and their causes.

Personnel other than those who performed the work being audited perform audits. ROBERTS may choose to have internal audits performed by a subcontractor. In such cases, the subcontractor will abide by ROBERTS documented audit procedure.

**Reference**

- QUAL-2010 Internal/External Auditing Operating Procedures

**Monitoring and Measurement of Processes**

ROBERTS applies suitable methods for measurement and monitoring of processes necessary to meet customer requirements and to demonstrate the process's continuing ability to satisfy its intended purpose. Measurement results are used to maintain and improve those processes.

When planned results are not achieved, corrective action is taken to ensure conformity of the product.

## Reference

- QUAL-2010 Internal/External Auditing Operating Procedures

**Monitoring and Measurement of Product**

ROBERTS applies suitable methods for measurement and monitoring of the characteristics of the product to verify that requirements for the product are met.

Evidence of implementation of required measurement and monitoring and conformance with the acceptance criteria used is recorded. Records indicate the authority responsible for release of product.

Product does not proceed or is not released for shipment until all specified activities have been satisfactorily completed and the related documentation is available and authorized.

## Reference

- QUAL-2003 Monitoring and Measurement of Product Operating Procedure

**Control of Nonconformity**

ROBERTS ensures product that does not conform to requirements is controlled to prevent unintended use or delivery.

ROBERTS provides for identification, recording and reviewing the nature and extent of the nonconformity encountered.

The ROBERTS documented procedure defines arrangements made for ensuring that nonconforming product is controlled.

## Reference

- QUAL-2007 Control of Nonconforming Product Operating Procedure
- SALES-2001 Customer Corrective Action Request Operating Procedure

**Nonconformity Review and Disposition**

ROBERTS reviews non-conformities and determines action(s) to be taken. The disposition can be:

- A. OK'd
- B. Scrap
- C. Repair

- D. Sort (and scrap or repair non-conforming parts)
- E. Use with customer approval
- F. Return to (Vendor/Supplier)

Responsibility and authority for reviewing and resolving non-conformities are defined. When required by contract, the proposed use or repair of nonconforming product is reported for approval to the customer (if applicable).

The description of any rework, adjustment, accepted nonconformity; product repair or modification is recorded.

Where it is necessary to repair or rework product, verification requirements are determined and implemented.

When nonconforming product is detected after delivery or use is started, ROBERTS takes action appropriate to the effects or potential effects of the nonconformity.

Reference

- QUAL-2007 Control of Nonconforming Product Operating Procedure

### **Analysis of Data for Improvement**

A process for the analysis of applicable data is followed as one means of determining the effectiveness of the QMS and for identifying where improvements can be made. ROBERTS collects data generated by measuring and monitoring activities and other relevant sources. These sources include:

- A. Customer Satisfaction Surveys
- B. Tag Activity
- C. First Article Inspection results
- D. SPC Capability Studies
- E. Supplier performance
- F. Change Request Forms
- G. Monthly indicators
- H. Quality Alert Forms
- I. Call reports
- J. Foreman's Report
- K. Flash Analysis
- L. Contract Review
- M. Up-front Quality/Engineering interviews with customers
- N. Audit results
- O. New Job Meetings
- P. Troubled Job Meetings
- Q. Sales/Marketing interviews with customers
- R. Comments from Roberts employees

Data is reviewed with Roberts's management, the QST, the Designated Leads and owners of the individual procedures. Changes to the QMS are proposed and

the Management Representative reviews the proposed changes. Modifications to the procedures and work instructions are made and reviewed with the owners. If required, new procedures and work instructions are made and reviewed. Final changes are reviewed by the QST and implemented. New procedures, work instructions and changes to existing documents are reviewed with appropriate personnel. Effectiveness is reviewed by the ISO auditor.

#### Reference

- QUAL-2011 Analysis of Data Operating Procedure
- QUAL-2000 Management Review Operating Procedures

### **Continual Improvement**

ROBERTS continually improves the QMS by evaluating the use of the quality policy, objectives, internal audit results, analysis of data, corrective and preventive action and management review. Sources include:

- A. Contract review data
- B. Exceptions to Quotes
- C. Engineering/Quality Customer Interviews
- D. Key Indicators
- E. Flash Analysis
- F. Customer Satisfaction Survey
- G. Call Reports
- H. New/Troubled Job Meeting Notes
- I. Change Request Forms
- J. Quality Alerts

ROBERTS tracks these inputs for analysis and actions. The Quality Steering Team analyzes applicable data, assigns action items to appropriate personnel, tracks progress, verifies results, and assures that both Customer proposals as well as Roberts proposals are generated, tracked, and implemented. It also manages communications with the customer.

Changes will be reviewed with the Designated Leads for applicability to other jobs and for jobs already scheduled.

#### Reference

- QUAL-2000 Management Review Operating Procedures
- QUAL-2008 Improvement Operating Procedure
- QUAL-2010 Internal/External Auditing Operating Procedures
- QUAL-2011 Analysis of Data Operating Procedure

### **Corrective Action**

ROBERTS has established a documented procedure for reducing or eliminating the causes of nonconformities in order to prevent recurrence.

The procedure for the corrective action process includes, but is not limited to:

- A. Reviewing nonconformities (including customer complaints).
- B. Determination the root causes of non-conformities.
- C. Evaluation of the need for actions to ensure that non-conformities do not recur.
- D. Implementation of any actions determined necessary to ensure that non-conformities do not recur.
- E. Recording results of actions taken.
- F. Follow-up to ensure corrective action taken is effective and recorded.

Customer Returns/Complaints are input into the Customer Corrective Action Request (CCAR) database in the UNIX system. This data base tracks the nature of the action, the job data associated with the parts, customer contact, any Return Material Authorizations (RMA's) required, Root Cause Analysis, further actions taken, and closure date.

Reference

- SALES-2001 Customer Corrective Action Request Operating Procedure
- QUAL-2008 Improvement Operating Procedure

### **Preventive Action**

ROBERTS has established a documented procedure for eliminating the causes of potential non-conformities to prevent occurrence. QMS records and results from the analysis of data are used as inputs for preventive action, as applicable.

The system level preventive action procedure addresses:

- A. Identification of potential non-conformities.
- B. Determination of the causes of identified potential non-conformities and recording the results.
- C. Determination of preventive action needed to eliminate causes of potential non-conformities.
- D. Implementation of preventive action.
- E. Review to ensure preventive action taken is effective and recorded.

A Corrective/Preventive/Improvement Action Form (QUAL-4011) is generated and input into the tracking system with an assigned CPI number. All forms are reviewed by the Management Representative and presented to the QST for approval. An implementation and verification plan are assigned and completed.

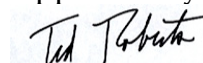
Reference

- QUAL-2008 Improvement Operating Procedure

Responsible Department: ISO Management Representative

Authored by: Quality Steering Team

Approved by: Ted Roberts, President



Approved by: Jim Roberts, ISO Management Representative



Last Revision		
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