Quality System Manual

ARROW MANUFACTURING CO.
Precision Springmakers Since 1951.

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1 About this Manual

This manual was developed and is maintained by the Arrow Manufacturing Company Management Representative. Requests for changes should be submitted to the Management Representative for review and approval. Updates of the manual are issued as required. Each department head ensures that the manual and related procedures are accessible to all employees. This may be in electronic of hardcopy format.

It is the responsibility of the department heads to ensure that all employees are familiar with the content of the quality manual and that they are kept informed of any changes and updates. The department heads ensure that obsolete hardcopies, issues or pages of this manual are invalidated and/or disposed of as per established procedure. “Appendix B” shows current revision levels of revised pages and a brief description of the change. In case of doubt, the current issue date or revision number shall be confirmed with the Management Representative.

For each clause, reference is made to the applicable quality assurance procedure (QAP), which may in turn reference other procedures and / or work instructions. QMS interactive processes are described in “Appendix A”.

1.1 Distribution:

Company-wide. Revised for distribution on company network.
No. 6 Registrar Review Copy.

1.2 Approvals

This edition of the Quality Manual is effective as of Sept. 27, 2010

President:	Tom Selnau	**Date:**	Sept. 27, 2010
Management Representative:		**Date:**	Sept. 27, 2010

2 Introduction

Arrow Manufacturing Company is located at 16 Jeannette Street, Bristol, Connecticut. Arrow 's business activities are the manufacture of flat, coil, compression, extension and torsion springs; flat metal and wire forming, according to customers' specifications.

This quality manual describes the quality management system of Arrow and its compliance with the requirements of **ISO 9001:2008.** Its purpose is

- **for internal use,** to communicate to all employees the company's quality policy and quality objectives, to make them familiar with the method of compliance with **ISO 9001:2008** requirements, to facilitate the implementation and maintenance of the quality management system and to ensure its continuity and required updates during changing circumstances, to provide effective communication and control of quality related activities and a documented base for quality system audits.

- **for external use,** to inform Arrow's customers and other interested external partners about Arrow's quality policy, its implemented quality management system and measures of compliance with **ISO 9001:2008** requirements.

3 General

3.1 Scope

The quality management system described hereafter complies with the requirements of **ISO 9001:2008** and covers the manufacture of flat, coil, compression, extension and torsion springs; flat metal and wire forming, according to customers' specifications.

3.1.1 Application exclusion: Requirements documented under clause 7.3, Design & development are considered excluded from the scope of this QMS and do not affect the organizations ability, or responsibility, to provide product that meets our customer and/or regulatory requirements. Arrow Manufacturing Company does not provide design as a process of its QMS or for its manufactured product.

3.2 References

- **ISO 9000: 2005**, quality management systems - fundamentals and vocabulary
- **ISO 9001: 2008**, quality management systems - requirements

4 Quality Management System

4.1 General Requirements *(Management Review 4.1-1)*

Arrow Manufacturing has established, documented, implemented and continues to maintain a quality management system, and continually improves its effectiveness in accordance with the requirements of the ISO 9001:2008 standard.

Arrow Manufacturing

a) has determined the processes needed for the quality management system and its application throughout Arrow Manufacturing (see Process Flow Chart),
b) has determined the sequence and interaction of these processes (see Process Flow Chart),
c) has determined criteria and methods needed to ensure that both the operation and control of these processes are effective (see 5.6 Management Review and 8.2.2 Internal Quality Audit),
d) has ensured the availability of resources and information necessary to support the operation and monitoring of these processes (see 5.6 Management Review and 8.2.2 Internal Quality Audit),
e) monitors, measures (where applicable) and analyzes these processes (see 5.6 Management Review), and
f) implements actions necessary to achieve planned results and continual improvement of these processes (see 5.6 Management Review).

These processes are managed in accordance with the requirements of the ISO 9001:2008 standard.

Where Arrow Manufacturing chooses to outsource any process that affects product conformity to requirements, they ensure control over such processes. The type and extent of control applied to these outsourced processes is identified within the Purchasing Procedure.

Arrow Manufacturing out sources the following processes: Plating, Heat Treating, Passivate, Internal Audits, and Calibration.

4.2 Documentation Requirements *(Quality Planning 4.2-1)*

4.2.1 General ***(Quality Planning 4.2-1)***

The quality management system documentation includes

a) documented statements of a quality policy and quality objectives (see 5.3 and 5.4.1),
b) this quality manual,
c) documented procedures and records required by the ISO 9001:2008 standard, (see 4.2.3, 4.2.4, 8.2.2, 8.3, 8.5.2, 8.5.3), and
d) documents, including records determined by Arrow Manufacturing to be necessary to ensure the effective planning, operation and control of its processes.

4.2.2 Quality Manual ***(Quality Planning 4.2-1)***

Arrow Manufacturing has established and maintains this document as our quality manual.

a) The scope of the quality management system extends to the quality management processes required by the ISO 9001:2008. (See 2. Scope for exemptions.)

b) The quality manual references a number of procedures that document important processes in our quality management system. A list of the procedures can be found in the Document Master List. The procedures required by the ISO 9001:2008 standard can be found on the list.

c) A description of the interaction between the processes of the quality management system can be found in the Process Flow Chart.

4.2.3 Control of Documents ***(Quality Manual Control 4.5-1, Production Document Control4.5-2, External Document Control 4.5-3)***
Documents required by the quality management system are controlled. Records are a special type of document and are controlled according to the requirements given in 4.2.4.

The document and data control procedures have been established to define the controls needed

a) to approve documents for adequacy prior to issue,
b) to review and update as necessary and re-approve documents,
c) to ensure that changes and the current revision status of documents are identified,
d) to ensure that relevant versions of applicable documents are available at points of use,
e) to ensure that documents remain legible and readily identifiable,
f) to ensure that documents of external origin determined by the organization to be necessary for the planning and operation of the quality management system are identified and their distribution controlled, and
g) to prevent the unintended use of obsolete documents, and to apply suitable identification to them if they are retained for any purpose.

See the Document Control Procedures for guidance.

4.2.4 Control of Records (***Quality Records 4.16-1, Quality Manual Control4.5-1)***
Records established to provide evidence of conformity to requirements and of the effective operation of the quality management system are controlled.

The Quality Records procedure has been established to define the controls needed for the identification, storage, protection, retrieval, retention and disposition of records.

Records shall remain legible, readily identifiable and retrievable.

5 Management Responsibility

5.1 Management Commitment *(Management Review 4.1-1)*
Top management provides evidence of its commitment to the development and implementation of the quality management system and continually improving its effectiveness by

a) the use of one-on-one communications, corrective and preventive actions and quality system performance postings, which serve to continually remind employees of the importance of meeting customer as well as statutory and regulatory requirements,
b) establishing the quality policy (see 5.3),
c) ensuring that quality objectives are established (see 5.4.1),
d) conducting management reviews (see 5.6), and

e) ensuring the availability of resources (see 6.0).

5.2 Customer Focus ***(Quality Planning 4.2-1, Contract Review 4.3-2)***

Top management ensures that customer requirements are determined and are met with the aim of enhancing customer satisfaction (see 7.2.1 and 8.2.1).

5.3 Quality Policy ***(Management Review 4.1-1)***

Top management ensures that the quality policy

a) is appropriate to the purpose of the organization,
b) includes a commitment to comply with requirements and continually improve the effectiveness of the quality management system,
c) provides a framework for establishing and reviewing quality objectives,
d) is communicated and understood within Arrow Manufacturing, and
e) is reviewed for continuing suitability.

Quality Policy

The Management of Arrow Manufacturing Company is committed to quality and continual improvement in all areas of the organization. Working as a team, management shall ensure that the company's objectives for quality and customer satisfaction are met.

Arrow's goal for quality is to maintain and improve products and processes, to consistently meet customer needs as well as internal requirements. Customer satisfaction is the company's main priority: we want to be our customers' preferred supplier.

President, May 26, 2009

5.4 Planning ***(Management Review 4.1-1, Quality Planning 4.2-1)***

5.4.1 Quality Objectives

Top management ensures that quality objectives, including those needed to meet requirements for product [see 7.1 a], are established at relevant functions and levels within the organization. The quality objectives are measurable and consistent with the quality policy. These quality objectives are documented in the Management Review Minutes.

5.4.2 Quality Management System Planning

Top management ensures that

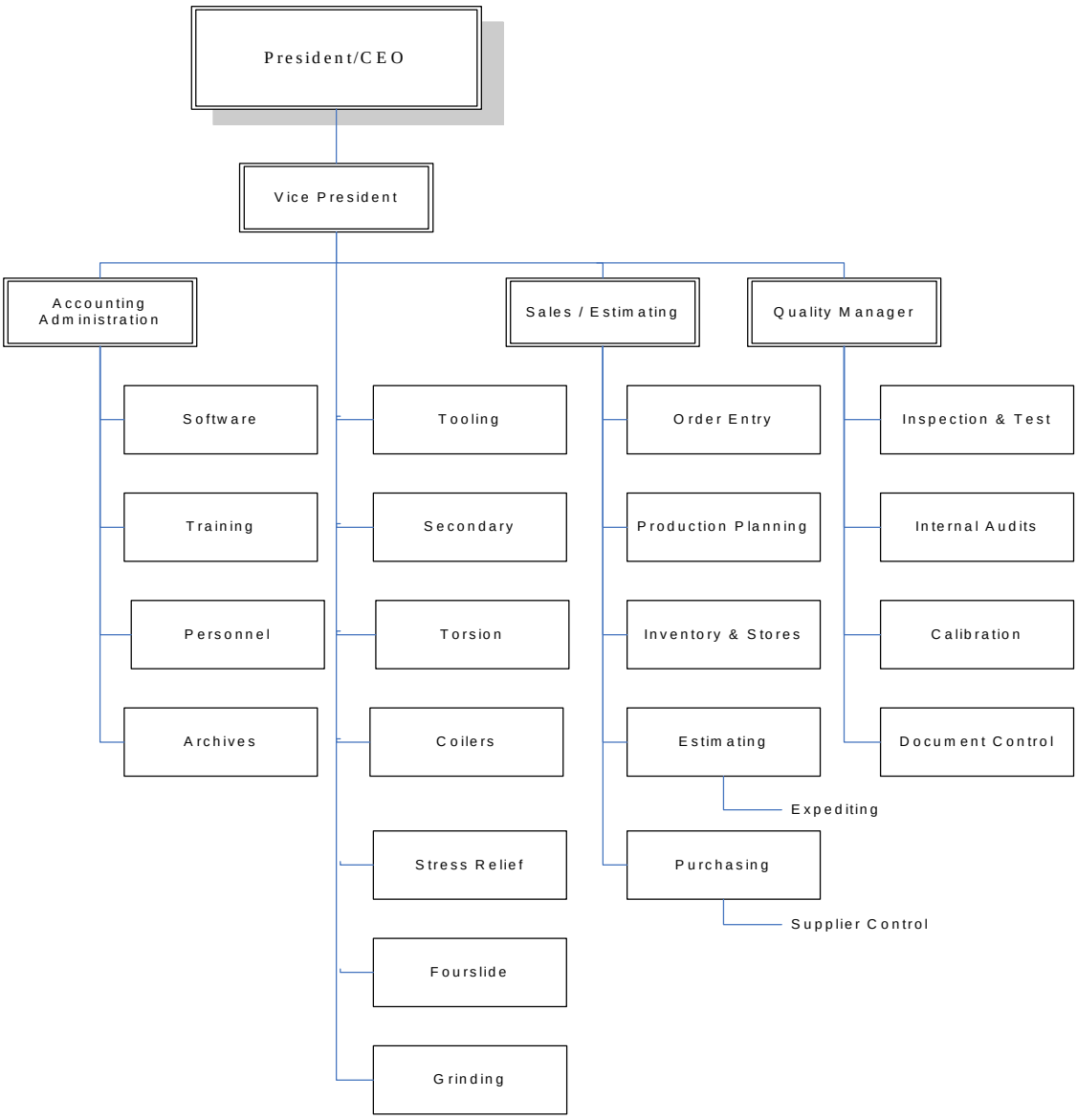
a) the planning of the quality management system is carried out in order to meet the requirements given in 4.1, as well as the quality objectives, and
b) the integrity of the quality management system is maintained when changes to the quality management system are planned and implemented.

The planning of the quality management system is conducted in the management review meetings (see 5.6).

5.5 Responsibility, Authority and Communication

5.5.1 Responsibility and Authority ***(Management Review 4.1-1, Quality Planning 4.2-1)***

Top management ensures that responsibilities and authorities are defined and communicated within Arrow Manufacturing (see Organization Chart below).



Responsibilities and authorities are recorded as part of the employee job description.

President - Overall in charge of the organization, keeping up the highest quality for the company.

Vice President - In charge of planning and the day to day activities of production, shipping and receiving. Ensures that the quality system is implemented in the production, quality, shipping and receiving departments under their direction. Initiates corrective action, preventive action and continual improvement efforts related to product, processes or the quality system.

Quality Manager - Responsible for entire quality system and ensuring its compliance to ISO 9001:2000. Also responsible for the daily activities of the Quality Department and its personnel and their following of the policies and procedures. Initiates corrective actions related to product, processes or quality system.

Sales Manager/Estimator - Responsible for establishing relationships with customers and receive feedback on the effectiveness of the quality system and initiates corrective actions for customer complaints.

All others - Responsible for following all policies and procedures and understanding the quality management policy and notifying their supervisors when quality system requires attention.

Quality Management (Subcontracted) – As appropriate, may be responsible for quality related functions as follows: document reviews and approvals, initiation/recommendations involving corrective and/or preventive action (CAPA) for product, process or customer complaints, assistance in the maintenance of the QMS.

Responsibilities:

	Product	Process	Quality System	Inspection	Materials	Calibration			
President/CEO	X	X	X						
Vice President	X	X	X						
Quality Manager	X	X	X	X		X			
Sales Manager/Estimator	X		X		X				
Material Purchasing Manager	X		X		X				
Shipping Receiving	X	X	X	X	X				
Production Supervisors				X	X				
Operators	X	X	X	X	X	X			
Quality Techs	X	X	X	X	X	X			

5.5.2 Management Representative ***(Management Review 4.1-1)***

Top management has appointed the President, as Quality Management Representative. The Quality Management Representative irrespective of other responsibilities, has responsibility and authority that includes

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

5.5.3 Internal Communication ***(Management Review 4.1-1)***
Top management ensures that appropriate communication processes are established within Arrow Manufacturing and that communication takes place regarding the effectiveness of the quality management system.

Management utilizes employee meetings and quality boards to communicate to employees the effectiveness of the quality management system. Employees are afforded an open door policy to the Quality Management Rep / President to report on the effectiveness issues.

5.6 Management Review *(Management Review 4.1-1)*
5.6.1 General
Top management reviews their quality management system, a minimum of once per year, to ensure its continuing suitability, adequacy and effectiveness. This review includes assessing opportunities for improvement and the need for changes to the quality management system, including the quality policy and quality objectives.

Records from management review are maintained (see 4.2.4).

5.6.2 Review input
The input to management review includes information on

a) results of audits,
b) customer feedback,
c) process performance and product conformity,
d) supplier performance
e) status of preventive and corrective actions,
f) follow-up actions from previous management reviews,
g) current resources.
h) changes that could affect the quality management system (including quality policy and quality objectives), and
i) recommendations for improvement.

5.6.3 Review output
The output from the management reviews includes any decisions and actions related to

a) improvement of the effectiveness of the quality management system and its processes,
b) improvement of product related to customer requirements, and
c) resource needs.

6 Resource Management

6.1 Provisions of Resources *(Management Review 4.1-1, Quality Planning 4.2-1, Quoting 4.3-1, Process Control 4.9-1, Training 4.18-1)*
Arrow Manufacturing determines and provides the resources needed

a) to implement and maintain the quality management system and continually improve its effectiveness, and
b) to enhance customer satisfaction by meeting customer requirements.

Resources needs are established during management review meetings (see 5.6) and even during the manufacturing planning process. Management provides the resources to meet both the customer requirements and the requirements of the quality management system.

6.2 Human Resources

6.2.1 General *(Quality Planning 4.2-1)*

Personnel performing work affecting conformity to product requirements are competent on the basis of appropriate education, training, skills and experience.

6.2.2 Competence, Awareness and Training *(Training 4.18-1)*

Arrow Manufacturing

a) determines the necessary competence for personnel performing work affecting conformity to product requirements,
b) where applicable, provides training or takes other actions to achieve the necessary competence,
c) ensures that the necessary competence has been achieved,
d) ensures that its personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives, and
e) maintains appropriate records of education, training, skills and experience (see 4.2.4).

6.3 Infrastructure *(Quality Planning 4.2-1, Process Control 4.9-1)*

Arrow Manufacturing determines, provides and maintains the infrastructure needed to achieve conformity to product requirements. Infrastructure includes, as applicable

a) buildings, workspace and associated utilities,
b) process equipment (both hardware and software), and
c) supporting services (such as transport, communication or information systems).

Management has provided the above items, if during planning there is a need to add to or modify infrastructure then it will be addressed.

6.4 Work Environment *(Process Control 4.9-1, Equipment Maintenance 4.9-2)*

Arrow Manufacturing determines and manages the work environment needed to achieve conformity to product requirements. The current work environment has been proven through inspection and testing of the product to meet customer requirements and is maintained in order not to adversely affect the product and maintain a safe an efficient work place. If the work environment is the cause of product nonconformities then employees shall immediately notify their direct supervisor of the problem.

7 Product Realization

7.1 Planning of Product Realization *(Quality Planning 4.2-1)*

Arrow Manufacturing plans and develops the processes needed for product realization. Planning of product realization is consistent with the requirements of the other processes of the quality management system (see 4.1).

In planning product realization, Arrow Manufacturing determines the following, as appropriate:

a) quality objectives and requirements for the product;
b) the need to establish processes and documents, and to provide resources specific to the product;
c) required verification, validation, monitoring, measurement, inspection and test activities specific to the product and the criteria for product acceptance;
d) records needed to provide evidence that the realization processes and resulting product meet requirements (see 4.2.4).

The output of this planning shall be in a form suitable for Arrow Manufacturing' method of operations.

This process is documented within the Quality Planning, Quote and Contract Review procedures. The results of Contract Review include shop travelers, approved prints and inspection plans, defined processes.

7.2 Customer-related Processes *(Quoting 4.3-1, Contract Review 4.3-2)*

7.2.1 Determination of Requirements Related to the Product

Arrow Manufacturing determines the

a) requirements specified by the customer, including the requirements for delivery, and for post-delivery activities,
b) requirements not stated by the customer but necessary for specified or intended use, where known,
c) statutory and regulatory requirements applicable to the product, and
d) any additional requirements considered necessary by the organization.

7.2.2 Review of Requirements Related to the Product

Arrow Manufacturing reviews the requirements related to the product. This review is conducted prior to the organization's commitment to supply a product to the customer (e.g. submission of tenders, acceptance of contracts or orders, acceptance of changes to contracts or orders) and ensures that

a) product requirements are defined,
b) contract or order requirements differing from those previously expressed are resolved, and
c) the organization has the ability to meet the defined requirements.

See Contract Review Procedure.

Records of the results of the review and actions arising from the review shall be maintained (see 4.2.4).

Where the customer provides no documented statement of requirement, the customer requirements are confirmed before acceptance.

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

7.2.3 Customer Communication

Arrow Manufacturing determines and implements effective arrangements for communicating with customers in relation to

a) product information,
b) enquiries, contracts or order handling, including amendments, and
c) customer feedback, including customer complaints.

7.3 Design and Development *(Not applicable)*

See section 3.1.1 Application Exclusion under General section 3, Scope 3.1.

7.4 Purchasing *(Purchasing 4.6-1, Subcontract Purchase 4.6-2, Supplier Control4.6-3, Receiving Inspection 4.10-1)*

7.4.1 Purchasing Process

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

Arrow Manufacturing evaluates and selects suppliers based on their ability to supply product in accordance with requirements. Criteria for selection, evaluation and re-evaluation are established in the Purchasing Procedure. Records of the results of evaluations and any necessary actions arising from the evaluation are maintained (see 4.2.4).

7.4.2 Purchasing Information

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

a) requirements for approval of product, procedures, processes and equipment,
b) requirements for qualifications of personnel, and
c) quality management system requirements.

Arrow Manufacturing ensures the adequacy of specified purchase requirements prior to their communication to the supplier.

7.4.3 Verification of Purchased Product

Arrow Manufacturing establishes and implements the inspection or other activities necessary for ensuring that purchased product meets specified purchase requirements (see the Purchasing Procedure).

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

7.5 Productions and Service Provision *(Customer Supplied Material 4.7-1, Product ID & Traceability 4.8-1, Process Control 4.9-1, Calibration 4.11-1, Inspection Status 4.12-1, Material Handling 4.15-1)*

7.5.1 Control of Production

Arrow Manufacturing plans and carries out production and service provision under controlled conditions. Controlled conditions include, as applicable

a) the availability of information that describes the characteristics of the product,
b) the availability of work instructions, as necessary
c) the use of suitable equipment,
d) the availability and use of monitoring and measuring equipment,
e) the implementation of monitoring and measurement, and
f) the implementation of product release, delivery and post-delivery activities.

7.5.2 Validation of Processes for Production
Arrow Manufacturing validates any processes for production and service provision 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.

Validation demonstrates the ability of these processes to achieve planned results.
Arrow Manufacturing establishes arrangements for these processes including, as applicable

a) defined criteria for review and approval of the processes,
b) approval of equipment and qualification of personnel,
c) use of specific methods and procedures,
d) requirements for records (see 4.2.4), and
e) revalidation.

These requirements are recorded in the process's work order and quality/control plan.

7.5.3 Identification and Traceability
Where appropriate, product is identified by suitable means throughout product realization.

Arrow Manufacturing identifies the product status with respect to monitoring and measurement requirements throughout product realization.

Where traceability is a requirement, the unique identification of the product is controlled and records are maintained (see 4.2.4).

7.5.4 Customer Property
Arrow Manufacturing exercises care with customer property while it is under their control or use. It identifies, verifies, protects and safeguards customer property provided for use or incorporation into the product. If any customer property is lost, damaged or otherwise found to be unsuitable for use, it is reported to the customer and records maintained (see 4.2.4).

NOTE Customer property can include intellectual property and personal data.

7.5.5 Preservation of Product
Arrow Manufacturing preserves the product during internal processing and delivery to the intended destination in order to maintain conformity to requirements. As applicable, preservation includes identification, handling, packaging, storage and protection. Preservation also applies to the constituent parts of a product.

7.6 Control of Monitoring and Measuring Equipment *(Calibration 4.11-1)*

Arrow Manufacturing determines the monitoring and measurements to be undertaken and the monitoring and measuring equipment needed to provide evidence of conformity of product to determined requirements.

Arrow Manufacturing has defined the calibration process within the Calibration procedure to ensure that monitoring and measurement can be carried out and are carried out in a manner that is consistent with the monitoring and measurement requirements.

Where necessary to ensure valid results, measuring equipment is:

a) calibrated and / or verified, or both, at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards; where no such standards exist, the basis used for calibration or verification shall be recorded;
b) adjusted or re-adjusted as necessary;
c) identified in order to determine its calibration status;
d) safeguarded from adjustments that would invalidate the measurement result;
e) protected from damage and deterioration during handling, maintenance and storage.

Arrow Manufacturing assesses and records the validity of the previous measuring results when the equipment is found not to conform to requirements. Appropriate action is taken on the equipment and any product affected.

Records of the results of calibration and verification are maintained (see 4.2.4).

When used in the monitoring and measurement of specified requirements, the ability of computer software to satisfy the intended application will be confirmed. This shall be undertaken prior to initial use and reconfirmed as necessary. Currently Arrow Manufacturing does not utilize this type of equipment.

8 Measurement, Analysis and Improvement

8.1 General *(Management Review 4.1-1, Quality Planning 4.2-1)*

Arrow Manufacturing plans and implements the monitoring, measurement, analysis and improvement processes needed

a) to demonstrate conformity to product requirements,
b) to ensure conformity of the quality management system, and
c) to continually improve the effectiveness of the quality management system.

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

These systems are normally determined during the Management Review Process (see 5.6).

8.2 Monitoring and Measurement

8.2.1 Customer Satisfaction ***(Management Review 4.1-1,Customer Satisfaction 4.20-4)***

As one of the measurements of the performance of the quality management system, Arrow Manufacturing monitors information relating to customer perception as to whether they have met customer requirements.

8.2.2 Internal Audit ***(Internal Audits 4.17-1)***

Arrow Manufacturing conducts internal audits at planned intervals to determine whether the quality management system

a) conforms to the planned arrangements (see 7.1), to the requirements of the ISO 9001:2008 Standard and to the established quality management system requirements, and
b) is effectively implemented and maintained.

The Internal Audit Procedure has been established to define the responsibilities for planning and conducting audits, establishing records and reporting results.

The procedure ensures a planned program, and takes into consideration the status and importance of the processes and areas to be audited, as well as the results of previous audits. The audit criteria, scope, frequency and methods are defined. The selection of auditors and conduct of audits ensures objectivity and impartiality of the audit process. Auditors shall not audit their own work.

Records of the audit and their results shall be maintained (see 4.2.4).

Management responsible for the area being audited ensures that any necessary corrections and corrective actions are taken without undue delay to eliminate detected nonconformities and their causes. Follow-up activities include the verification of the actions taken and the reporting of verification results (see 8.5.2).

8.2.3 Monitoring and Measurement of Processes ***(Statistical Techniques 4.20-1, Pareto 4.20-.2, SPC 4.20-3)***

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

Internal audits, in-process inspections, final inspections, and trend analysis of nonconformances and corrective actions are the monitoring methods used to make decisions on whether or not processes are achieving planned results.

8.2.4 Monitoring & Measurement of Product ***(InProcess Inspection 4.10-2, Final 4.10-3, First Piece 4.10-4)***

Arrow Manufacturing monitors and measures the characteristics of the product to verify that product requirements have been met. This is carried out at appropriate stages of the product realization process in accordance with the planned arrangements (see 7.1). Evidence of conformity with the acceptance criteria is maintained.

Records indicate the person(s) authorizing release of product for delivery to the customer (see 4.2.4).

The release of product and service delivery to the customer does not proceed until the planned arrangements (see 7.1) have been satisfactorily completed, unless otherwise approved by a relevant authority and, where applicable, by the customer.

8.3 Control of Nonconforming Product *(Nonconforming Product 4.13-1)*

Arrow Manufacturing ensures that product which does not conform to product requirements is identified and controlled to prevent its unintended use or delivery. The Nonconforming Product Procedure defines the controls and related responsibilities and authorities for dealing with nonconforming product.

Where applicable, Arrow Manufacturing deals with nonconforming product by one or more of the following ways:

a) by taking action to eliminate the detected nonconformity;
b) by authorizing its use, release or acceptance under concession by a relevant authority and, where applicable, by the customer;
c) by taking action to preclude its original intended use or application.
d) by taking action appropriate to the effects, or potential effects, of the nonconformity when nonconforming product is detected after delivery or use has started,

When nonconforming product is corrected it is subject to re-verification to demonstrate conformity to the requirements.

Records of the nature of nonconformities and any subsequent actions taken, including concessions obtained, are maintained (see 4.2.4).

8.4 Analysis of Data *(Pareto Analysis 4.20-2)*

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

The analysis of data provides information relating to

a) customer satisfaction (see 8.2.1),
b) conformity to product requirements (see 8.2.4),
c) characteristics and trends of processes and products including opportunities for preventive action (see 8.2.3 and 8.2.4), and
d) suppliers (see 7.4).

The data collection requirements are determined during Management Review meetings (see 5.6), responsibilities are assigned for the data collection and the analysis takes place throughout the data collection processes and during Management Reviews (5.6).

8.5 Improvement ***(Management Review 4.1-1, Pareto 4.20-2, Corrective& Preventive Action 4.14-1)***

8.5.1 Continual Improvement

Arrow Manufacturing continually improves the effectiveness of the quality management system through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and Management Review (5.6).

8.5.2 Corrective Action

Arrow Manufacturing takes action to eliminate the causes of nonconformities in order to prevent recurrence. Corrective actions shall be appropriate to the effects of the nonconformities encountered.

The Corrective and Preventive Action Procedure was established to define requirements for

a) reviewing nonconformities (including customer complaints),
b) determining the causes of nonconformities,
c) evaluating the need for action to ensure that nonconformities do not recur,
d) determining and implementing action needed,
e) records of the results of action taken (see 4.2.4), and
f) reviewing the effectiveness of the corrective action taken.

8.5.3 Preventive action

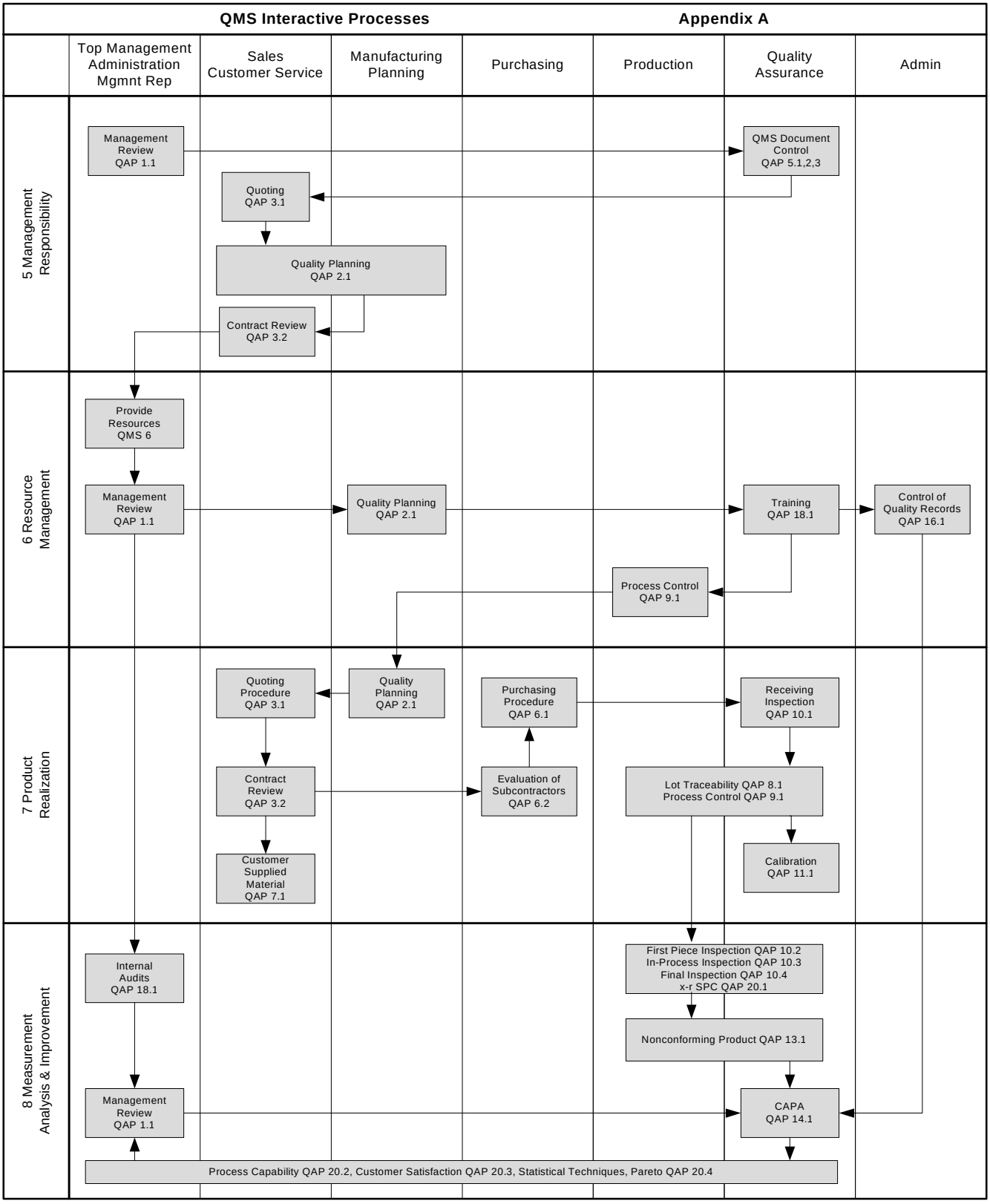
Arrow Manufacturing determines action to eliminate the causes of potential nonconformities in order to prevent their occurrence. Preventive actions shall be appropriate to the effects of the potential problems.

The Corrective and Preventive Action Procedure was established to define requirements for

a) determining potential nonconformities and their causes,
b) evaluating the need for action to prevent occurrence of nonconformities,
c) determining and implementing action needed,
d) records of results of action taken (see 4.2.4), and
e) reviewing the effectiveness of the preventive action taken.

Arrow Manufacturing Quality Management System
Documentation Cross Reference Matrix

ISO 9001:2008	Policies	Procedures
4.2 Documentation **4.2.1 General** **4.2.2 Quality manual** **4.2.3 Control of documents** **4.2.4 Control of records**	4 Quality management system	**4.2-1 Quality Planning** **4.5-1 Quality Manual Control** **4.5-2 Production Document Control,** **4.5-3 External Document Control,** **4.16-1 Quality Records**
5.1 Management commitment **5.2 Customer focus** **5.3 Quality policy** 5.4 **Planning** 5.5 **Responsibility, authority and communication** **5.6 Management review**	5 Management responsibility	4.3-2 **Contract Review** 4.2-1 **Quality Planning** **4.1-1 Management Review**
6.1 Provision of resources **6.2 Human resources** **6.3 Infrastructure** **6.4 Work environment**	6 Resource management	4.1-1 **Management Review** 4.2-1 **Quality Planning** 4.18-1 **Training** 4.9-1 **Process Control**
7.1 Planning product realization **7.2. Customer related processes** **7.4 Purchasing process** **7.5 Production provision** 7.5.1**Control of production** **7.5.2 Validation of processes For production** **7.5.3 Identification and traceability** **7.5.4 Customer property** **7.5.5 Preservation of Product** 7.6 **Control of Monitoring and measuring Equipment**	7 Product realization	4.2-1 **Quality Planning** 4.3-1 **Quoting** 4.3-2 **Contract Review** **4.6-3 Supplier Control** **4.6-2 Subcontractor Purchasing** **4.6-1 Purchasing Procedure** **4.10-1 Receiving Inspection** **4.9-1 Process Control** **4.8-1 Lot Traceability** **4.12.-1 Inspection & Test Status** **4.7-1 Customer Supplied Product** **4.15-1 Material Handling** **4.11-1 Calibration**
8.1 General 8.2. **Monitoring and measurement** **8.2.1Customer satisfaction** **8.2.2 Internal audit** **8.2.3 Monitoring and Measurement of Process** **8.2.4 Monitoring and Measurement of Product** **8.3 Control of Nonconforming Product** 8.4 **Analysis of data** 8.5 **Improvement** **8.5.1Continual improvement** **8.5.2 Corrective action** **8.5.3 Preventive action**	8 Measurement, analysis and improvement	**4.20-3 Customer Satisfaction** **4.17-1 Internal Audits** **4.20-1 X-r SPC** **4.20-2 Process Capability** **4.10-3 In-Process Inspection** **4.10-4 Final Inspection** **4.10-2 First Piece Inspection** **4.13-1 Nonconforming Product** **4.20-4 Statistical Techniques, Pareto** **4.1-1 Management Review** **4.20-4 Statistical Techniques, Pareto** **4.14-1 Corrective and Preventive Action**



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"Appendix B"

Page No.	Section	Revision	Date	Description of Change	Initials
ALL	ALL	Draft	06/06/02	Revised various sections to conform to latest revision. Previous Draft 3 was FDIS	P.J.
5	3.1	Draft	08/23/02	Corrected scope description in clause. Revised organizational chart.	P.J.
All	All	A	12/12/02	Revised quality objectives. Issue company wide as approved.	P.J.
10	5.4	A	6/25/03	Revised quality objectives to better focus for measurable metrics. Remove CEO from Organization chart.	P.J.
All	All	B	5/25/05	Revised quality manual to reflect changes in management organization, chart, and quality policy.	P.J.
8	5.0	C	12/26/06	Updated Org Chart	P.J.
All	All	D	5/26/09	Updated the whole manual to align with the ISO 9001:2008 standard.	R.G.
7,8,18		E	9/27/10	Updated org chart and responsibilities to include Vice President.Corrected Documentation Cross Reference Matrix to ISO 9001:2008.	CW