AMETEK®
SENSOR TECHNOLOGIES

DREXELBROOK®

AMETEK
MEASUREMENT & CALIBRATION TECHNOLOGIES DIVISION
SENSOR TECHNOLOGIES BUSINESS UNIT
DREXELBROOK
205 KEITH VALLEY ROAD
HORSHAM, PA 19044

QUALITY SYSTEM MANUAL

INTRODUCTION

The purpose of this manual is to explain the general procedures for the implementation of AMETEK Drexelbrook's Quality System in accordance with the requirements of ISO 9001.

The basic Quality System for AMETEK Drexelbrook is outlined in this manual. It is not intended that this manual cover all contingencies of individual contracts, but that it details the basic system used by AMETEK Drexelbrook to control quality. Specific procedures related to specific contracts will be developed and implemented on an individual contract basis as required.

APPROVED _____ DATE 1/7/2014
VICE PRESIDENT
SENSOR TECHNOLOGIES BUSINESS UNIT

APPROVED _____ DATE 1/7/2014
QUALITY ASSURANCE MANAGER

Control # _____

440-0018-095		Sht. 1 of 34	APP'D BY SGA
ISSUE	EDO NO.	APP'D	DATE
19	1-13-116	SGA	3/25/13
20	12-13-113	SGA	1/7/14

QUALITY MANUAL REVISION HISTORY

ISSUE #	DATE REVISED	REVISED BY	COMMENTS / REASON
7	7/91	SGA	Update to ISO-9001 (EDO #7-91-201)
8	5/93	SGA	Update to Comply with ISO-9001 (EDO # 5-93-201)
9	6/94	SGA	Update Signature Page. Clarify Bible Notes and Incorporate Changes Due to audit by DNV-2-94. EDO # 5-94-202
10	8/95	SGA	Update ISO-9001 – 1994 Edition
11	3/99	SGA	Update Signature Page. Update 23.9.3 Change M. Geary to S. Ladyansky
12	2/00	SGA	Update company change to AMETEK Drexelbrook. Update 23.9.3. Change S. Ladyansky to L.J. Kramer
13	2/02	SGA	Update minor changes sec. 3.2,5.0,9.0,14.0,16.0 Delete sec. 23.0 FAA –PMA Requirements
14	7/02	SGA	Update QA Policy and Signatures, design control from 5 stages to 3 stages.
15	9/03	SGA	Update and change format to comply with ISO 9000 :2000 edition

ISSUE #	DATE REVISED	REVISED BY	COMMENTS / REASON
16	11/04	SGA	Update Quality Objectives
17	4/07	SGA	Update due to organizational changes
18	10/09	SGA	Update to reflect ISO-9001:2008 Standard
19	1/13	SGA	Add training for Ex personnel
20	12/13	SGA	Update Quality Policy and Departmental Responsibilities to STBU Standard.

Table of Contents

1.0 QUALITY PROGRAM MANAGEMENT

1.1 General Requirements

1.1.1 AMETEK Drexelbrook has implemented a Quality Management System that is continuously maintained for effectiveness and process improvements in accordance with the requirements of ISO 9001.

1.2 Documentation Requirements

1.2.1 General

The AMETEK Drexelbrook system consists of four tiers of documentation. The first tier is the Quality Policy. The second tier is this Quality Manual which describes the quality system operating within AMETEK Drexelbrook to meet the ISO-9000 Quality System requirement's model. The third tier are those documents which detail the instructions and procedures from which employees perform specified work plans to ensure the effective planning, operation and control of the processes required. These instructions and procedures include Quality System procedures, detailed assembly procedures, inspection and test procedures, forms, assembly drawings and specifications, and process procedures and work instructions. The fourth tier is the records required to be maintained to provide objective evidence of compliance.

1.2.2 Quality System Manual

The Division Vice President, Sensor Technologies Business Unit, delegates the responsibility for the preparation, distribution and maintenance of the Quality System Manual to the Quality Assurance Manager.

Copies of this manual are available to all customers of AMETEK Drexelbrook, but specific operating instructions and procedures will be available for in-factory review only.

Controlled copies of this manual if required by contract are available from the Quality Assurance Manager (Ref. 440-0118-259).

The Q. A. Manager shall control company issued controlled copies of this manual on separate log.

Refer to Figure 1 for a description of the sequence and interactions of the process required to ensure the effective planning, operation, and control of the processes outline by the Quality System Manual

Figure 1 (A)

QUALITY MANAGEMENT SYSTEM – SEQUENCE AND INTERACTION

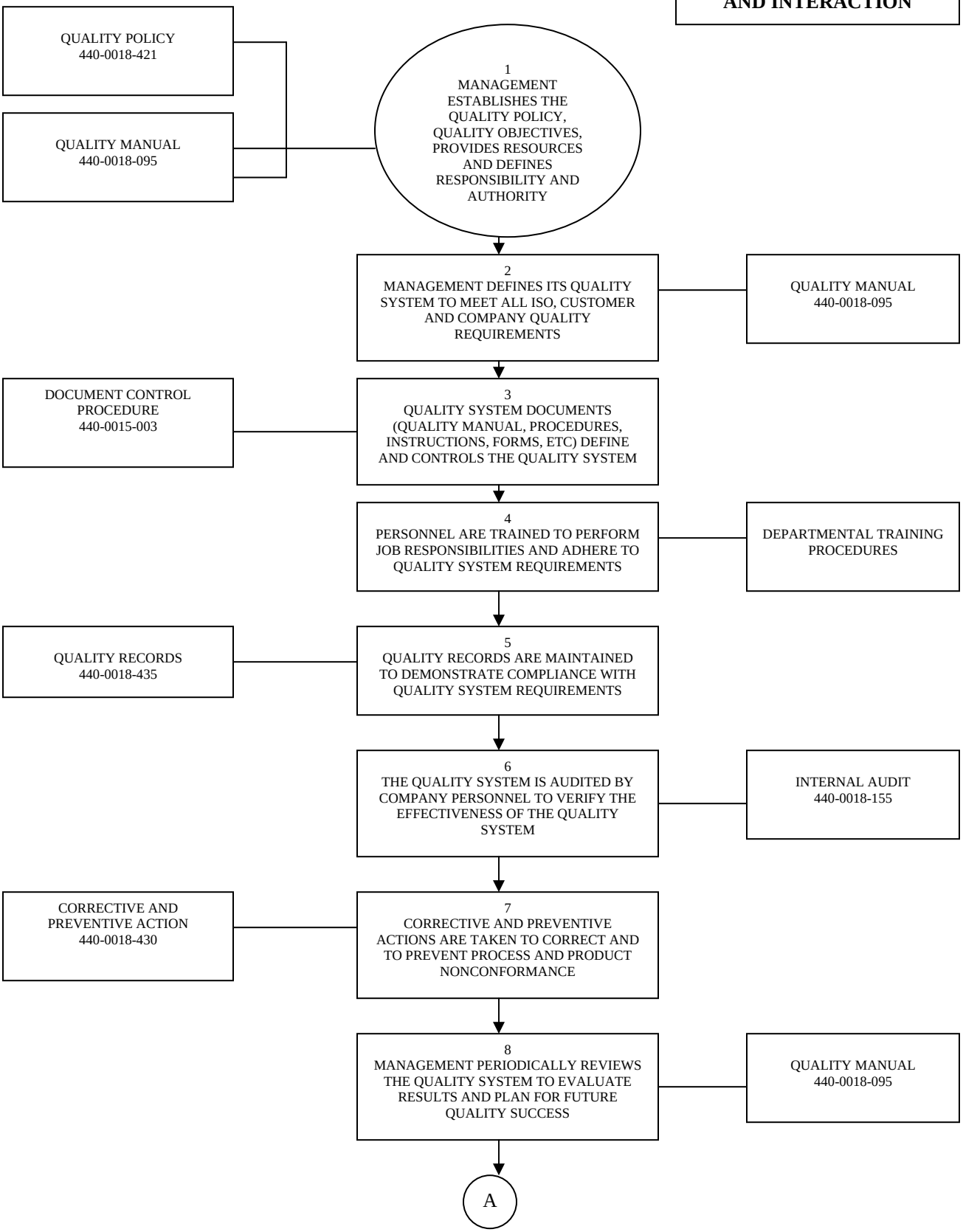
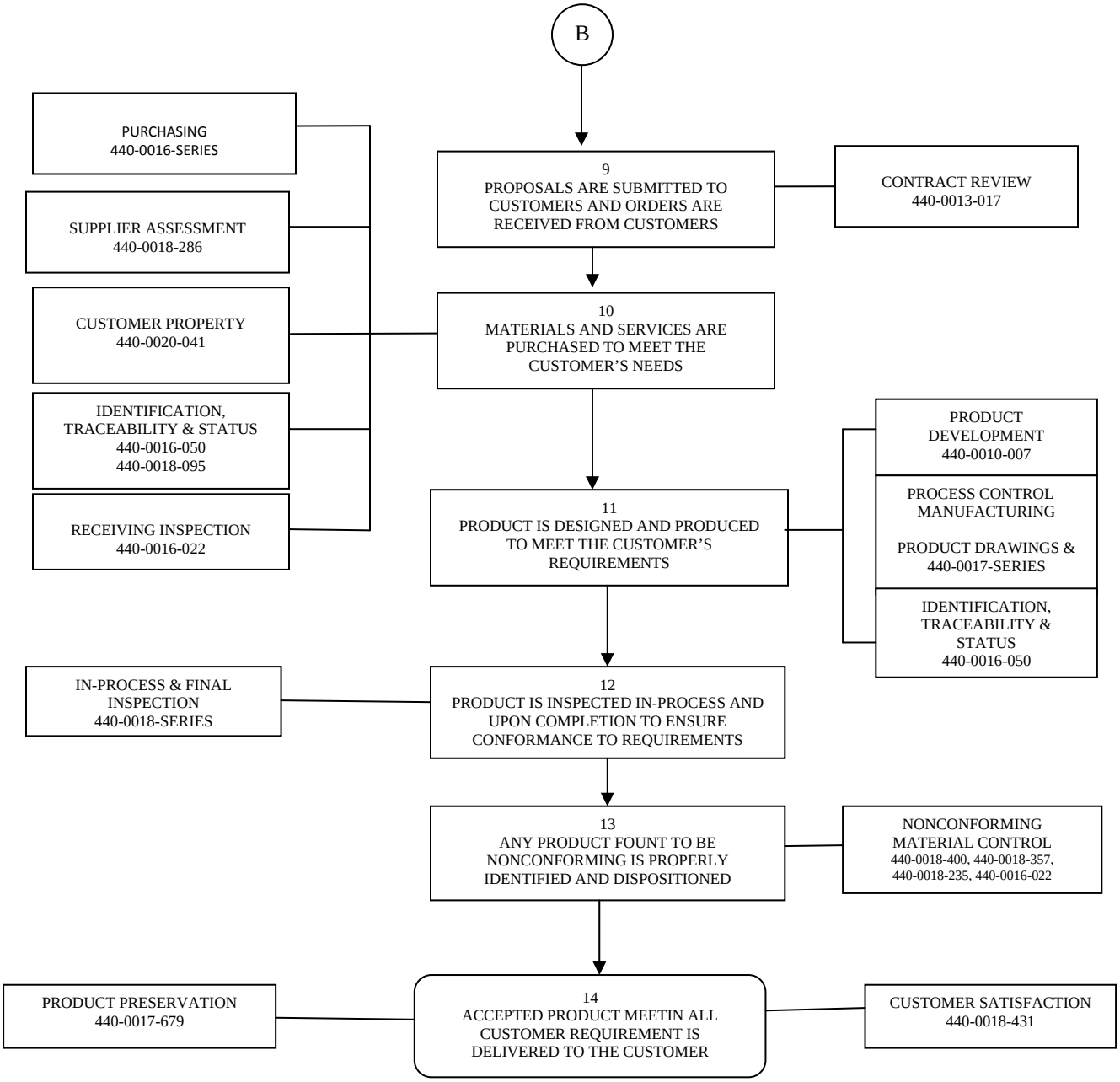


Figure 1 (B)

QUALITY MANAGEMENT SYSTEM – SEQUENCE AND INTERACTION



1.2.3 Control of Documents

Product drawings, part drawings, procedures, forms, and data are permanent and as such, EDO Procedure 440-0015-003 governs their origination, revision, and implementation.

Manufacturing process sheets are developed, maintained, and controlled by the Manufacturing department outlined in procedure 440-0017-750.

All documents are reviewed and approved for adequacy by authorized personnel before issue.

The online Vault Tracking system will be maintained by Copy Center and can be accessed by personnel at terminals for current revision/issue verification (Ref. 440-0011-038).

Only current, legible, identifiable drawings and changes thereto are available to operating personnel.

External documents are defined as industry related specifications and are referenced in 440-0115-223. This document is a reference tool only. For conformance requirements, it is the responsibility of the user to verify the correct issue level as required.

Where practical, major revisions to documents are identified by a symbol near the change.

Obsolete documents, which are retained for legal or knowledge preservation purposes, are stamped or marked obsolete.

Minor, temporary, or emergency changes to existing documents are permissible provided the change is initialed and dated on the document by authorized personnel. Copies of the changed drawing shall be forwarded to all affected personnel and a copy to the drafting department for revision.

The Engineering “Bibles” are located in the copy center. The “Bible” indexes are used for assigning part / procedure numbers.

1.2.4 Control of Records

Quality records are records that have an influence on the quality of processes and material and to demonstrate the achievement of the required quality and the effective operation of the quality system.
AMETEK Drexelbrook's quality records, storage locations, and retention times are listed in Table 1 below.
Records pertaining to a specific order or contract will be available for review by the authorized customer representative.

Records shall be maintained in a manner that they are readily available and in a suitable environment to minimize deterioration or damage or to prevent loss.

Record Description	**Storage Location**	**Retention Time (Minimum)**
Quality System Management Review	QA Manager's Office	5 Years
Customer's P.O. (Contract Reviews)	Closed Order Folder Files & Archives	7 Years
Design Reviews	Engineering	Life of Product Plus Product Warranty Period Plus 5 Years
Design Verification, Validation, and Change Records	Engineering	Life of Product Plus Product Warranty Period Plus 5 Years
Approved Vendors	Purchasing	Until Updated
Approved Unit Vendors	QA Engineering	Until Updated
Customer Requested Mill Certs (Traceability)	Closed Order Files & Archives	7 years
Receiving Inspection Records	On Line	Life of Product Plus Product Warranty Period Plus 5 Years
Final Inspection Records (Conforming Material)	Closed Order Files & Archives	Life of Product Plus Product Warranty Period Plus 5 Years
Insp. / Meas. / Test Equipment Calibration Records	QA Engineering	Life of Product Plus Product Warranty Period Plus 5 Years
Inspection Reports (Non Conforming Material)	QA Engineering	Life of Product Plus Product Warranty Period Plus 5 Years
Corrective and Preventive Action Requests	QA Engineering	7 Years
Instrument Test and Calibration Data Sheets	QA Engineering & Archives	Life of Product Plus Product Warranty Period Plus 5 Years

Record Description	Storage Location	Retention Time (Minimum)
Engineering Document Changes (E.D.O.'s)	Copy Center & Archives	Life of Product Plus Product Warranty Period Plus 5 Years
Internal System Audits	QA Manager's Office	Life of Product Plus Product Warranty Period Plus 5 Years
Quality Assurance Status Reports	QA Engineering	5 Years
Training Records	By Department	1 Year After Termination
Training Records for Ex (Hazardous Location) Personnel	QA Manager's Office	5 Years After Termination
Vendor Evaluations	Quality Assurance	Life of Product Plus Product Warranty Period Plus 5 Years

2. Management Responsibility

2.1 Management Commitment

AMETEK Drexelbrook has implemented a Quality Management System to support the Quality Policy and to continually improve its effectiveness in accordance with the requirements of ISO 9001:2008 and any applicable statutory and regulatory requirements as appropriate.

2.2 Customer Focus

AMETEK Drexelbrook is committed to assuring customer requirements and expectations are met through application of advanced technology, reliable engineering, proper application engineering, efficient manufacturing and order processing and outstanding follow-up and field support.

2.3 Quality Policy

AMETEK Drexelbrook has established a Quality Policy to provide a framework and objectives for an effective Quality Management System relevant to our goals and the expectations of our customers.

The AMETEK – Sensor Technologies team works collaboratively with our customers to continually improve our business processes, product designs and technical services to ensure customer satisfaction.

2.4 Planning

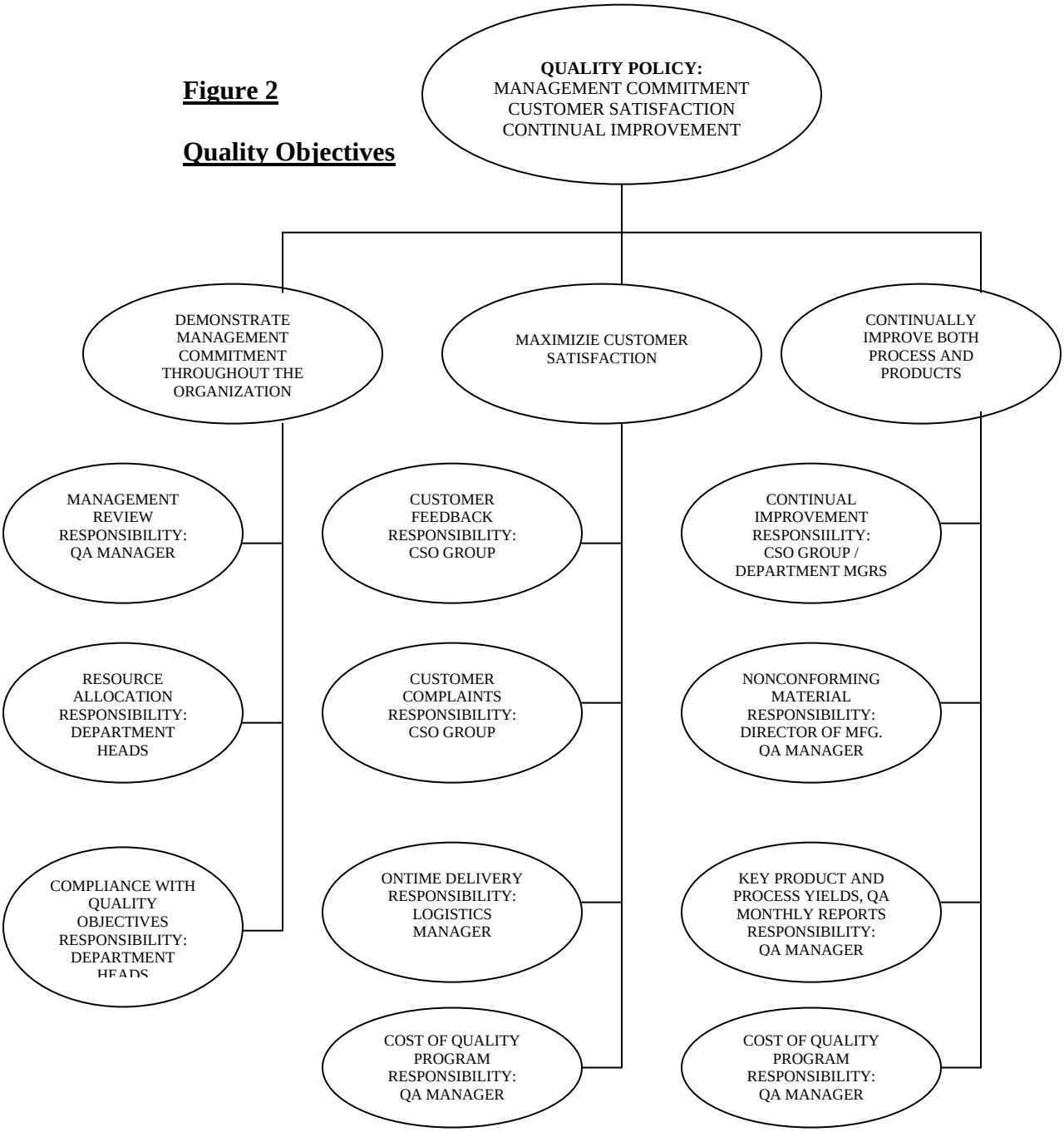
2.4.1 Quality Objectives

All department managers are responsible for identifying and implementing the processes, resources, and controls to achieve the required quality.

See Figure 2 for the major quality objective initiatives to support the Quality Policy and the Quality Management System.

Figure 2

Quality Objectives



2.4.2 Quality Management System Planning

AMETEK Drexelbrook department managers are responsible to provide the appropriate resource requirements for planning, provide adequate resources, and assign trained personnel to execute all functions of the Quality Management System.

When organization changes or changes to the quality management system are implemented or responsibilities are redefined it is the responsibility of the Human Resources department and appropriate department managers to insure the timely revision of associated documentation and the proper training of associated personnel.

2.5 Responsibility, Authority, and Communication

2.5.1 Responsibility and Authority

The AMETEK Drexelbrook department managers are responsible for ensuring that adequate resources and trained personnel are available to carry out the work and verification activities. This will be accomplished as an integral part of Quality Management System. All personnel performing quality functions have sufficient, well-defined responsibilities, authority, and the organizational freedom to identify, evaluate and solve problems that arise. All personnel have the responsibility to stop process, which produce nonconforming material.

The organizational charts in figure 3 of this manual define organizational reporting relationships. Individual job descriptions are maintained for all personnel, which defines both the authority and qualifications associated with the job.

The Quality Assurance Department shall have the authority and responsibility to identify and record any product, process, and quality system problems or deficiencies and to prevent the recurrence of any non-conformities relating to the products and processes of the quality system.

Executive Administration

- To assign functions necessary to carry out corporate objectives. This includes responsibility for assurance that they are being carried out.
- Establish goals for the organization for each operating period.
- Review departmental operating plans for consistency with corporate goals, management philosophy, and procedures, using established techniques for problem solving and decision-making.

- Analyze AMETEK Drexelbrook Products strengths and market conditions to decide what businesses we will be in.
- Decide what major improvements and extensions of our technology must be made in order to meet our long-range business goals.
- Decide how the company needs to be organized in order to achieve our long-range goals.
- Communicate above plans to others within the organization as needed

Marketing/Sales/Customer Service

- Conducts market research and analysis to establish the desired quality characteristics
- Establishes functional specifications of products and associated services
- Advertises and promotes the company's products, emphasizing their quality aspects
- Monitors the quality of competitors
- Carries out contract and order review
- Provides customer liaison and service
- Conducts research and analysis to determine current and future customer expectations
- Provides assistance to represent the needs of the customer in internal processes and functions

Engineering

- Prepares specifications from functional specifications, product briefs & customer specified requirements
- Designs products and documents the design for manufacturability
- Coordinates design reviews
- Administrates verification & testing of designs
- Documents design outputs
- Performs product support and maintenance of existent designs
- Leads advanced product quality planning
- Verifies designs and establishes design performance control points

Quality

- Establishes & maintains the quality management system
- Audits implementation of the quality system
- Initiates requests for & follows up on corrective & preventive actions
- Processes customer complaints
- Collects performance & quality data
- Assists Marketing/Sales/Customer Service in representing customer needs

- Provides input to Quality Planning process (Control/Quality Plans)
- Assure that all products conform to AMETEK Drexelbrook Products published specifications and meet all applicable requirements.

Materials / Purchasing

- Responsibility to assure that our inventory is of the requisite quality, quantity and at a reasonable cost, now and in the future.
- Selects qualified suppliers
- Prepares & approves purchasing documents
- Monitors and assesses supplier performance

Operations

- Determines production personnel and equipment requirements
- Controls and monitors processes
- Defines workmanship standards in accordance with specifications.
- Maintains production equipment
- Administrates storage areas, shipping & receiving
- Provides input to Quality Planning process (Control/Quality Plans)

Human Resources

- Maintains personnel qualification requirements
- Implements measures to motivate personnel. Coordinates training

Finance

- To ensure that the company remains in a strong financial position so that growth out of earnings will be sufficient to obtain the corporations goals and objectives
- Provide accurate and timely financial reports to effectively monitor the business plan
- Continually analyze cash outlays and receipts to insure optimum cash flow
- Safeguard the organizations assets by instituting effective internal control procedures and recommending cost savings

AMETEK Drexelbrook Organization Chart

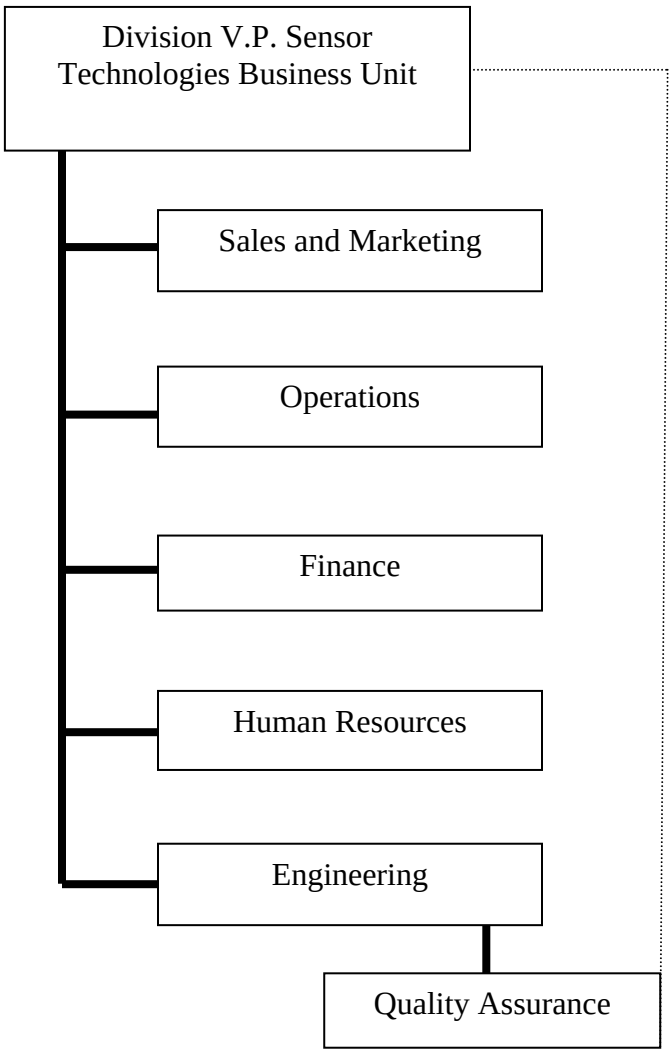


Figure 3

2.5.2 Management Representative

The Quality Assurance Manager is the designated Management Representative responsible to establish, implement and maintain the processes required to ensure conformance to the AMETEK Drexelbrook Quality System Manual and to the ISO-9001standard.

The Quality Assurance Manager has the responsibility to report to Upper Management on the performance of the Quality Management System, and the need for any improvements to the Quality System, and to promote the awareness of customer requirements throughout AMETEK Drexelbrook.

2.5.3 Internal Communication

AMETEK Drexelbrook Management ensures that appropriate communication means are established within the organization and that communication takes place regarding the customer's needs and the effectiveness of the quality management system. Procedures, company and departmental training, meetings, bulletin board postings, and email are the some of the methods used to accomplish effective internal communications throughout the organization.

2.6 Management Review

2.6.1 General

The Quality Assurance Manager shall have the management responsibility for reporting on the performance of the quality system in satisfying the requirements of ISO-9001 and to review the effectiveness of AMETEK Drexelbrook's quality system, corporate quality policy, quality objectives and as a basis for improvement.

Management reviews will be conducted annually. Management reviews may be held at other times if warranted by organizational changes or changes to the quality management system.

2.6.2 Review Input

Management review input will consist of the following inputs:

a) audit results,
b) customer feedback,
c) process conformance and product conformity,
d) status of preventative and corrective action,
e) follow-up actions from previous management reviews,
f) changes that could affect the quality management system, and
g) recommendations for improvement.

2.6.3 Review Outputs

Management review outputs will contain any decisions and actions related to:

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

The quality assurance manager is responsible to issue minutes of the management review as records per section 2.4 of this manual.

3. Resource Management

3.1 Provision of Resources

Department managers are responsible to determine the appropriate resources to implement, maintain, and continually improve the effectiveness of the quality management system, to enhance customer satisfaction by meeting customer requirements.

3.2 Human Resources

3.2.1 General

Department managers are responsible for insuring that all personnel performing work affecting product quality are competent, based on appropriate education, training, skills, and experience.

The Human Resources Department provides guidance for training done by supervisory personnel and coordinates specialized training, which affects several departments.

3.2.2 Competence, Awareness, and Training

Department managers are responsible to provide training in the skills required for employees under their supervision to perform their job. Department managers are responsible to evaluate the performance of employees and provide retraining when performance is unacceptable. Department managers maintain individual training records of employees under their supervision.

Effectiveness of personnel training is accomplished by yearly performance reviews, the monitoring of process performance and internal auditing.

Department managers are responsible to ensure that personnel are aware of the relevance and importance of their activities and how the contribute to the achievement of the quality objectives.

3.3 Infrastructure

AMETEK Drexelbrook establishes and maintains the facilities, utilities, all associated hardware, software and supporting services needed to achieve product quality.

3.4 Work Environment

AMETEK Drexelbrook establishes and maintains the appropriate work environment needed to achieve product quality.

4. Product Realization

AMETEK Drexelbrook Plans and develops the processes needed for product realization consistent with the requirements of the other processes of the quality management system.

4.1 Planning of Product Realization

In planning of product realization AMETEK Drexelbrook shall determine the following as appropriate:

a) quality objectives and requirements for the product;
b) the need to establish processes, documents, and provide resources specific to the product;
c) the required verification, validation, monitoring, and inspection activities specific to the product and the criteria for product acceptance.

The output of this planning will be documented shall be in a form suitable for AMETEK Drexelbrook's methods of operation.

4.2 Customer Related Processes

4.2.1 Determination of Requirements Related to the Product

AMETEK Drexelbrook has the appropriate processes and procedures in place as applicable to determine:

a) requirements specified by the customer, including the requirements for delivery and post delivery activities;
b) requirements not stated by the customer but necessary for specified or intended use, if known;
c) statutory and regulatory requirements related to the product and any additional requirements determined by AMETEK Drexelbrook.

4.2.2 Review of Requirements Related to the Product

AMETEK Drexelbrook reviews the requirements related with the product prior to committing with a customer to supply the product to insure that all parties have agreed that:

a) the product requirements are defined;
b) contract or order requirements differing from those previously expressed are resolved;
c) the defined requirements can be achieved.

Records of the results of the review and actions arising from the review shall be maintained in the customer order folder.

When the customer provides no statement of requirements, the customer requirements are confirmed before acceptance.

When product requirements are changed AMETEK Drexelbrook sales department is responsible to ensure relevant documents are amended and relevant personnel are made aware of the changed requirements.

4.2.3 Customer Communication

AMETEK Drexelbrook develops and implements effective methods of communicating with customers in relation to product information, inquires, contracts, purchase orders, including amendments, customer feedback and complaints.

4.3 Design and Development

4.3.1 Design and Development Planning

New Product Development at AMETEK Drexelbrook is broken down into three phases, which outline the plans and controls by Sales, Marketing, Engineering, and Manufacturing, to accomplish the goals and objectives of each respective phase. The three phases of AMETEK Drexelbrook's new product development are Proposal Phase, Development Phase, and Batch Release Phase. (Ref. 440-0010-007) This planning includes the appropriate review, verification, and validation to each phase and the responsibilities and authorities for design and development.

4.3.2 Design and Development Inputs

Design inputs are documented in the “Product Development Proposal” (PDP). These inputs include but are not limited to:

a) functional and performance requirements;
b) applicable statutory and regulatory requirements;
c) information from previous similar designs;
d) customer or other requirements, essential for the design and development of new products.

The “Product Development Proposal” is reviewed by Engineering and Marketing for adequacy and to assure the design is complete, unambiguous, and does not conflict. Final project authorization is by the Business Unit Manager.
After the project is approved, the Project Coordinator will assemble a team with representatives from Marketing, Service, Purchasing, Product Engineering, Manufacturing, and Quality Assurance departments.

4.3.3 Design and Development Outputs

AMETEK Drexelbrook provides the outputs in a form that enables verification against the design and development input and approved before release.

The design and development outputs will include:

- The input requirements for design and development;
- Appropriate information for purchasing, production, and service;
- Product acceptance criteria;
- Characteristics of the product that are essential for its safe and proper use.

4.3.4 Design and Development Review

Design reviews are conducted by the New Product Development Team at suitable stages throughout the design, usually scheduled at a milestone point in the project. Design reviews are typically held after completion of the first prototype but before submittal to the approval agency and before Batch Release Phase.
Additions to the development team may be included in the review if appropriate
The criteria for design reviews shall contain but are not limited to:

- Evaluate the ability of the results of design to meet requirements;
- Identify any problems and propose necessary actions. Records of the Design and development reviews shall be maintained.

4.3.5 Design and Development Verification

The Engineering Department has the responsibility during the development stage to verify the design to ensure the design and development outputs meet the design and development input requirements. Records of the results verification and any necessary actions shall be maintained.

4.3.6 Design and Development Validation

The Service Department in conjunction with the Engineering Department has the responsibility for validation of new production designs. Field proving sites are selected before the general release of new designs to validate the product is capable of meeting the requirements for specified applications or intended use.

4.3.7 Control of Design and Development Changes

Changes to new products under development are the responsibility of the product development team. Changes to existing designs are governed by the engineering drawing order procedure 440-0015-003. Changes are reviewed, verified, validated as appropriate and approved before implementation. The review of changes includes the evaluation of the effect of the changes on component parts and products already delivered. Records of the results of changes and any necessary actions are maintained.

4.4 Purchasing

4.4.1 Purchasing Process

Procurement of materials and services is limited to suppliers and sub-contractors approved for specific items or services.

Suppliers and sub-contractors are evaluated for producing materials and assemblies or providing services to specified requirements.

Suppliers and sub-contractors are evaluated using the following methods on-site survey, capability survey, inspection history, or sample submission depending upon the effect of the purchased material on the final product. Reference procedure 440-0018-286.

Purchase orders issued to suppliers contain the specific requirements for the items to be provided. Records of approved suppliers and sub-contractors are maintained.

4.4.2 Purchasing Information

AMETEK Drexelbrook Purchasing department insures that specified purchase requirements are adequate prior to being communicated to the supplier including where appropriate:

a) requirements for approval of product, procedures, processes and equipment;
b) qualification of personnel and quality system requirements.

4.4.3 Verification of Purchased Product

Verification of purchased products is the responsibility of the Receiving Inspection Department to ensure purchased product meets specified purchase requirements.

All controlled parts and materials that affect or become part of the final product shall be subject to verification upon receipt to assure conformance to technical requirements. Such verification shall include visual, dimensional inspection, or test, or other methods as required affirming material acceptability.
No controlled parts or materials are permitted to be received in stores without inspection as outlined in Procedure 440-0016-022. Material and products waiting testing will be segregated from approved stock. Non-conforming material will be segregated and controlled.

Supplier material certifications and test reports used for verification shall be maintained on file.

Receiving inspection may be adjusted upon the basis of the quality assurance program exercised by suppliers. Historical evidence of the suppliers' satisfactory control of quality may be used to adjust the amount and kind of receiving inspection.

The Quality Assurance Department is responsible for electronic assemblies requiring verification or test.
Purchased product that is to be inspected or verified at the supplier's facility requires special arrangements from AMETEK Drexelbrook's purchasing department.

4.5 Production and Service Provision

4.5.1 Control of Production and Service Provision

AMETEK Drexelbrook Department Managers, under controlled conditions, establish and maintain production and services specific to their department's responsibilities. This includes the availability of information that describes the characteristics of the product, necessary training and work instructions, use of suitable equipment, the use of monitoring and measuring devices, and the implementation of release, delivery and post delivery activities.

Customer orders are reviewed by the Production Control Department prior to release to manufacturing to assure the requirements to produce product are obtainable in the terms of materials and resource availability and to schedule the orders to satisfy the customer need dates.

The Production Control Department is responsible for planning, generating, and scheduling work orders to the Manufacturing Department to provide routing instructions. There are three categories of work orders.

- Standing Work Orders - are primarily generated for sub-assemblies to be placed into stock.
- Work Orders - are primarily generated for customer product.
- Machine shop orders are generated for machined parts for customer orders.

In addition to routing instructions engineering design drawings, specifications, assembly procedures, and process sheets are key documents for control of production and service.

The manufacturing department is responsible for maintaining process equipment to ensure continuing process capability.

4.5.2 Validation of Processes for Production and Service Provision

Processes for production and services shall be validated where subsequent monitoring or measurement cannot verify the resulting output. This includes any processes where deficiencies become apparent only after the product is in use or the service has been delivered.

AMETEK Drexelbrook Engineering, Purchasing, Manufacturing, and Quality Assurance Departments establish arrangements for these processes including:

a) defined criteria for review and approval of the process
b) Approval of the equipment and qualification of personnel
c) Use of specific methods, procedures, and standards.
d) Requirements for procedures
e) Revalidation

Welding

A. Standard welding operations are controlled by weld symbols on fabrication drawings. Commercial flange to pipe welds are considered standard practice for experienced welders. Standard Welding procedures are contained in procedure 440-0017-366.
B. When required, special controls are implemented to meet contract or customer requirements. Welding standard 440-0017-368 describes the requirements for welding to ASME section IX.
C. Trained personnel will perform dye penetrant testing if required to meet special customer or contract requirements in accordance with procedure 440-0018-259.
D. ASME section IX certified weld procedures and welding personnel are filed in the welding shop with copies in Quality Assurance.
E. Customer or contract requirement for certified non-destructive testing or examination (dye penetrant, X-ray etc.) will be sub-contracted to qualified suppliers.

4.5.3 Identification and Traceability

Identification

Materials and product are identified throughout production where appropriate. This identification can consist of various methods including AMETEK Drexelbrook part numbers, model numbers, customer order numbers, serial numbers, material size, color codes, shop orders and routers.

Product shall be identified with respect to monitoring and measuring requirements where appropriate. Various methods used for product status identification include inspection stamps, inspection stickers, inspection reports, and forms, hold point areas and rejection and acceptance tags.

Scrap material will be identified to prevent it from inadvertent use.

Traceability

The AMETEK Drexelbrook's inventory control and order system, and customer order folder, maintain the following information for customer orders.

- Customer Purchase Order Number
- AMETEK Drexelbrook Order Number
- Equipment Model / Part Numbers
- Equipment Serial Numbers
- Customer Address
- Shipment Date and Quantity

The traceability trail is linked to equipment model numbers, serial numbers, and shipment date. The shipment date can be associated to a production time window derived from various production records, such as, material receipt date and revision date records. Equipment model numbers can be linked to serial numbers, which are linked to AMETEK Drexelbrook order numbers.
Mill Certification Traceability when required by customer order or customer contract shall be handled in accordance with procedure 440-0016-050.

4.5.4 Customer Property

Customer returned goods will be handled in accordance with procedure 440-0020-017.

Customer property will be inspected to determine the quantity received the condition of the property and correctness of the accompanying paperwork.

Customer property will be identified and stored in a protected area to minimize the possibility of damage and/or deterioration.

Customer property is not altered in any form without prior approval from the party supplying the property.

Any customer property lost, damaged, or otherwise found to be unsuitable for use shall be reported to the customer and records maintained in the order folder.

4.5.5 Preservation of Product

Handling

All materials shall be properly handled in such a manner as to prevent damage, contamination, and or deterioration. Specific handling procedures shall be developed for materials and products as required (Ref: 440-0017-309).

Storage

All materials shall be stored in such a manner as to prevent damage, contamination, and or deterioration.

All items in stock shall be identified by AMETEK Drexelbrook part number.

All age-controlled items shall be identified and controlled by shelf life Procedure 440-0016-053.

All end items shall be stored in a controlled area prior to shipping to prevent damage, misuse, etc.

Protection

All product and material to be used as product shall be maintained in a manner to assure proper preservation and segregation where appropriate.

Packaging

All packaging will be in accordance with specific procedures developed for specific products to ensure all equipment arrives at the customer location complete and free of damage (Ref: 440-0017-679).

Special packaging or marking requirements when specified by contract or purchase order shall be the responsibility of the Shipping Supervisor.

4.6 Control of Monitoring and Measuring Devices

AMETEK Drexelbrook's Quality Assurance Department is responsible for determining the monitoring and measurement requirements and establishes, implements, and maintains procedures to control, calibrate and maintain inspection, measurement, and test equipment used to demonstrate the conformance of product to the specified requirements.

Where necessary to ensure valid results, measuring equipment will:

a) be calibrated or verified at specified intervals, 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) be adjusted or readjusted as necessary;
c) be clearly marked with calibration status;
d) be safeguarded from adjustment that would invalidate the measurement result;
e) be protected from damage and deterioration during handling, maintenance, and storage.

AMETEK Drexelbrook's Quality Assurance department implements and maintains calibration systems to insure adequate control of inspection, measuring and test equipment and to assess the validity of previous results when the equipment is found not to conform to requirements. Calibration records are maintained for each item of inspection, measuring, and test equipment to provide a documented calibration history.

When computer software is used in monitoring and measurement of specified requirements, the ability of computer software to satisfy the intended application shall be confirmed prior to initial use and reconfirmed as necessary.

5. Measurement, Analysis, and Improvement

5.1 General

AMETEK Drexelbrook shall determine the planning and implementation methods for monitoring, measurement, analysis, and improvement process needed:

a) to demonstrate conformity of the product,
b) insure conformity to the Quality Management System, and
c) to continually improve the effectiveness of the Quality Management System.

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

5.2 Monitoring and Measurement

5.2.1 Customer Satisfaction

Customer feedback and satisfaction is crucial to AMETEK Drexelbrook's future success and is the basis and focus of the Quality Policy and the Quality Management System.

AMETEK Drexelbrook management views all customer feedback including customer complaints, design recommendations, or suggestions for improvement as an opportunity to continually improve the products and services we provide to our customers. AMETEK Drexelbrook actively solicits customer feedback through statements on various documents submitted to customers as well as through the company website.
The following statement is included as a header on all packing lists, sales acknowledgements, and invoices.

> "AMETEK Drexelbrook is committed to assuring total customer satisfaction on all of the products and services we provide. Please rate us on product, delivery, service, and packaging by going to our web site www.Drexelbrook.com. Click on the Contact Us menu button then click on Customer Satisfaction Opportunity. YOUR OPINION MATTERS!"

All Customer feedback including any employee or representative receiving any customer complaint, suggestions for improvement, or design recommendations should be forwarded in writing or by email to the Customer Satisfaction Opportunities coordinator or through the AMETEK Drexelbrook web site (www.drexelbrook.com). Click on the Contact Us menu button then click on Customer Satisfaction Opportunity.

Customer Satisfaction Opportunities are reviewed on a regular basis by the Customer Satisfaction Opportunity review group, which contains members representing management of all major AMETEK Drexelbrook operational departments. Customer complaints and problems are reviewed to assure that the customer has been satisfied and appropriate actions are taken to prevent recurrence.

Customer suggestions for improvements are forwarded to the appropriate department or product manager, or the new product development teams.

A database is maintained on the AMETEK Drexelbrook network of all Customer Satisfaction Opportunities. Reference AMETEK Drexelbrook procedure 440-0018-431.

5.2.2 Internal Audits

Internal Audits shall be conducted on all elements of the quality system to verify the effectiveness of AMETEK Drexelbrook's Quality Management System and the requirements of ISO 9001:2000 per procedure 440-0018-155.

The Quality Assurance Engineering group will prepare an audit schedule (Ref. 440-0118-289) to define the system audits scheduled for each calendar year assuring all elements of the quality system are covered.

Elements of the Quality System where problems are known or suspect can be audited on a more frequent basis as determined by the Quality Assurance Manager.

The internal audits will be conducted mainly by Quality Assurance personnel with additional members from Engineering and Manufacturing or other departments as required.

All personnel performing Quality System Audits shall be trained in accordance with Procedure 440-0018-445.
The audit team members assigned to audit an area shall be independent of those having direct responsibility for the audited area and to ensure the auditors do not audit their own work.

The results of the audit shall be recorded on the audit plan (Ref. 440-0118-188) describing all the findings. The audit report will then be distributed to the Department Head of the audited area, the area supervisor, along with copies to the Business Unit Manager and any affected individuals or departments.

Records of audits and follow-up actions shall be maintained per 440-0018-435.

5.2.3 Monitoring and Measurement of Processes

The Quality Assurance Department has the primary responsibility to apply suitable methods monitoring and, where applicable measurement of the quality management system processes. These methods shall demonstrate the ability of the processes to achieve planned results. When planned results are not achieved, correction and corrective action shall be taken, as appropriate to ensure conformity of the product.

Monthly or quarterly status reports is the primary method used to effectively monitor and measure AMETEK Drexelbrook's key quality management system processes. These status reports monitor and measure: key product and process yields, customer complaints and feedback, design problems and recommendations, sales order accuracy, key supplier performance and delivery performance.

5.2.4 Monitoring and Measurement of Product

AMETEK Drexelbrook Quality Assurance Department has the primary responsibility implement and maintain comprehensive methods for monitoring and measuring the characteristics of the product to verify that product requirements have been met at appropriate stages of the product realization.
Evidence of conformity with the acceptance criteria shall be maintained and records shall indicate the person(s) authorizing the release of product.
Product release and delivery is dependent upon compliance with appropriate requirements and procedures.

The primary method to accomplish product monitoring and measurement is the use of documented inspection and test procedures.

All assemblies or products that require in-process inspections or tests shall be identified by specific procedure or hold points identified in drawings, procedures, or routing instructions.

Quality Assurance personnel perform final inspection on all outgoing product before shipment (Ref. 440-0018-400).

All AMETEK Drexelbrook transmitters are tested to published specifications.
Various methods are used to record the results of acceptance including documented forms, logs, test data sheets, and the use of inspection stamps.

AMETEK Drexelbrook recognizes that the customer has the right to inspect their products at AMETEK Drexelbrook or at a subcontractor's facility, if specified in the contract or purchase order. AMETEK Drexelbrook will make available personnel, and inspection equipment as required.

5.3 Control of Nonconforming Product

Product or material to be used in product, which does not conform to product requirements, is identified and controlled to prevent its unintended use or delivery.

Nonconforming material is identified as nonconforming and segregated for disposition.

Reworked nonconforming product or material will be re-inspected to assure conformance to requirements.

Nonconforming materials parts or products are reviewed in accordance with procedures and may be accepted under concession by authorized personnel and where applicable the customer, provided all regulatory requirements are met.
Control of nonconforming product is documented in the following procedures.

- Receiving Inspection Procedure-440-0016-022
- Machine Shop Inspection Procedure –440-0018-357
- Electronic Product Inspection Procedure 440-0018-235
- Final inspection Procedure – 440-0018-400

When nonconforming product or material has been detected after delivery or use, the Quality Assurance Department has the responsibility to determine, the actions required appropriate to the effects or potential effects of the nonconformity.

5.4 Analysis of Data

AMETEK Drexelbrook's Quality Assurance Department has the responsibility to determine, collect and analyze the appropriate data to demonstrate the suitability and effectiveness of the Quality Management System.

Methods used to generate relevant data are reviewed periodically to ensure the information provided relates to:

a) customer satisfaction,
b) conformity to product requirements,
c) characteristics and trends of process and products including opportunities for preventive action.
d) key supplier performance.

5.5 Improvement

5.5.1 Continual Improvement

AMETEK Drexelbrook is committed to continually improve the effectiveness of the Quality Management System through utilizing the quality policy, quality objectives, audit results, analysis of data, corrective and preventative actions and management reviews.

5.5.2 Corrective Action

AMETEK Drexelbrook Quality Assurance Department establishes implements and maintains the procedures to ensure corrective action to eliminate the cause of nonconformities in order to prevent recurrence and ascertain that the actions taken shall be appropriate to the effects of the nonconformities encountered.

The corrective action procedures shall define the 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 the action needed,
e) record the results of action taken and,
f) reviewing corrective action taken.

The need for corrective action is identified through data from these primary sources.

- Quality Assurance Status reports,
- Nonconforming product inspection reports,
- Internal audits,
- Customer feedback or complaints,
- Supplier performance.

5.5.3 Preventative Action

AMETEK Drexelbrook Quality Assurance Department establishes implements and maintains the procedures to ensure corrective action to eliminate the cause of potential nonconformities in order to prevent recurrence and ascertain that the actions taken shall be appropriate to the effects of the potential nonconformities encountered.

The preventative action procedures shall define the requirements for:

a) determining potential nonconformities and their causes,
b) determining the need for action to prevent occurrence causes of nonconformities,
c) determining and implementing the action needed,
d) record the results of action taken and,
e) reviewing preventative action taken.

The need for preventative action is identified through data from these primary sources:

- Quality Assurance Status Reports
- Inspection and Test Records
- Audit Observations
- Field Service Reports
- Customer Feedback or Complaints
- Sub Contractor Problems
- Observations and Reports from Personnel

Appendix A: Partial list of Quality System Procedures

Procedure Title	Procedure No.
Engineering Drawing Control	440-0015-003
Corrective and Preventative Action	440-0018-430
Control of Records	440-0018-435
Final Inspection	440-0018-400
Receiving Inspection	440-0016-022
Machine Shop Inspections	440-0018-357
Electronic Product Inspection	440-0018-235
New Product Development	440-0010-007
Customer Satisfaction Opportunities	440-0018-431
Internal Audits	440-0018-155
Control of Measuring and Test Equipment	440-0018-186
Quality Policy	440-0018-421
Supplier Approval	440-0018-286