QUALITY MANAGEMENT SYSTEM
MANUAL

ISO 9001:2015
API Spec Q1 9th Edition

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1. INTRODUCTION

1.1 Purpose
Lamons developed, implemented, and operates a process-based Quality Management System (QMS) that provides for the system’s continual improvement. Our QMS aims to enhance customer satisfaction by assuring conformity to and consistency in providing products that meet customer and applicable statutory and regulatory requirements. Lamons customer base includes, but is not limited to, petroleum, petrochemical, and natural gas industries. This Quality Manual is formulated as per API Q1 9th Edition, ISO 9001:2015 “Quality Management Systems – Requirements” and other regulatory agencies.

1.2 Scope
The scope of this manual includes the manufacture and distribution of gaskets, the manufacture, inspection, testing, and distribution of fasteners and bolting and associated products for oil, gas, and petrochemical business. As prescribed in Section 4.1 and 4.2 of ISO 9001:2015, the scope also includes considerations for both external and internal issues as well as the requirements of interested parties which are relevant to the Lamons Quality Management System. All products manufactured or distributed will be processed in accordance with the applicable specifications, unless special characteristics are otherwise stated in customer order documents.

1.3 Application
The Quality Management System is established and defined in this manual to enhance customer satisfaction through its effective application, including processes for continual improvement of quality management, the assurance of conformity to the customer and applicable statutory and regulatory requirements.

Lamons does not design any products. Products are produced in accordance with Industry and/or Customer Standards. Products specifications and applicable drawings are supplied by the applicable industry associated with the product and/or the customer. Therefore, Section 8.3 of ISO 9001:2015 Design and Development and API Q1, 9th Edition Section 5.4 is considered as not being applicable. Because Lamons does not perform any design, Lamons has excluded the requirements in this Quality Manual except for API 17D Ring Joint Gaskets. As stipulated in API’s Advisory 6, Design Exclusion is not permitted for 17D Products and will be included in the Lamons QMS, on that basis.

Lamons does not service products after the sale and delivery. Therefore, the Service Provision in Section 8.5 of ISO 9001:2015 and Section 5.7 of API Q1 is not applicable and/or will be excluded in this Quality Manual.

Lamons does not perform any processes to customer supplied property. Therefore, Customer Supplied Property provisions in Section 8.5.4 of ISO 9001:2015 and Section 5.7.5 of API Q1 is not applicable and therefore is excluded in this Quality Manual.

Other process that are not applicable and/or will be excluded, if any, are given in section 4.2.2 (a).

2. NORMATIVE REFERENCE
The following standards contain provisions, which through reference in this text, constitute provisions of this manual. The latest editions of the referenced standards shall be applied.


3. TERMS AND DEFINITIONS
For the purposes of this Quality Manual, the terms and definitions given in the following standards and specifications shall be applied.


Vocabulary commonly used in technical standards of related industries.
4. QUALITY MANAGEMENT SYSTEM

4.1 General Requirements

Lamons maintains an established, documented, and implemented Quality Management System and continually improves its effectiveness in accordance with the requirements of:

- National/Local Statutory Regulations
- Legal Obligations, if any

By adhering to the following:

a. Determine the processes needed for the Quality Management System and the application throughout Lamons,

b. Determine the sequence and interaction of these processes,

c. Determine criteria and methods needed to ensure that both the operation and control of these processes are effective,

d. Ensure the availability of resources and information necessary to support operation and monitoring of the processes,

e. Monitor, measure (where applicable), and analyze these processes,

f. Implement actions necessary to achieve planned results and continual improvement of these processes and the effectiveness of the Quality Management System.

g. Determine external and internal issues.

h. Determine interested parties and their requirements.

These processes are managed by Lamons in accordance with the requirements of the standards listed above.

When any processes are subcontracted / outsourced that affect product conformity to all customer, statutory and regulatory requirements, Lamons will maintain responsibility for those processes. The type and extent of control to be applied to these outsourced processes is identified within the Quality Management System.

4.2 Documentation Requirements (API Q1, 9th Edition Section 4.4)

4.2.1 General

The Quality Management System documentation includes; the quality policy, quality objectives, quality manual, documented procedures and work instructions/associated documents which have been determined to be necessary to ensure the effective planning, operation and control of processes related to Quality Management System. In addition, records required by the international standard ISO 9001 and API Spec Q1 are included as a part of the required documentation.

4.2.2 Quality Manual

The Quality Assurance Department is responsible for the management of the quality manual. This Quality Manual is established, maintained and identifies the manner in which Lamons addresses each specific requirement of ISO 9001:2015, API Q1 9th Edition, and other technical specifications. The manual includes:

a. The scope of the Quality Management System, including details of applicability and justification for any exclusions (See Section 1.2);

b. The reference to the documented procedures established for Quality Management System;

c. A description of the interaction between the processes of the Quality Management System.

• Process interaction is demonstrated below.
### Business Process Interaction

<table>
<thead>
<tr>
<th>Process</th>
<th>Input</th>
<th>Output</th>
<th>Parameters for Success</th>
<th>Measured by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>Request for a Quote Order</td>
<td>Quotes Sales Order Job Launch</td>
<td>1) Accurate Information 2) Trained People</td>
<td>Customer Feedback through survey</td>
</tr>
<tr>
<td><strong>Manufacturing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchasing</td>
<td>Requisition MRP / Inventory Requirements</td>
<td>Purchase Order Goods/Services Received</td>
<td>1) Accurate Information 2) Trained People 3) Approved Suppliers</td>
<td>% of defective shipments from suppliers</td>
</tr>
<tr>
<td>Production</td>
<td>Job Drawings Raw Material</td>
<td>Parts Produced Production Paperwork</td>
<td>1) Accurate Information 2) Trained People 3) Suitable Equipment 4) Adherence to Documents</td>
<td>Production Quantities that reflect defective product produced</td>
</tr>
<tr>
<td>Inspection</td>
<td>Un-approved Parts Traveler Inspection Plan Drawing</td>
<td>Parts Approved/Rejected Inspection Reports</td>
<td>1) Accurate Information 2) Trained People 3) Suitable Equipment</td>
<td>Customer Satisfaction Data Customer Complaints Internal Audit NCR/CAR Program</td>
</tr>
<tr>
<td>Shipping</td>
<td>Approved Parts Pick List</td>
<td>Product Delivered Paperwork</td>
<td>1) Accurate Information 2) Suitable Equipment 3) Trained People</td>
<td>Customer Satisfaction Data On-Time Delivery</td>
</tr>
<tr>
<td>Engineering</td>
<td>a) Customer request for info b) Technical Help</td>
<td>Documentation</td>
<td>1) Accurate Information 2) Suitable Equipment</td>
<td>Customer Feedback</td>
</tr>
<tr>
<td>Human Resources Training</td>
<td>Untrained Person Needs Training Records</td>
<td>Trained Person Training Records</td>
<td>1) Accurate Information 2) Suitable Equipment</td>
<td>Annual Appraisal Training Matrix</td>
</tr>
</tbody>
</table>

**4.2.3 Control of Documents (API Q1, 9th Edition Section 4.4.3)**

Documents required by Lamons’ Quality Management System is controlled. A Master Index (QSP L1), maintained by the Quality Department, lists the documents and their current revision status. Records are a special type of document and are controlled per the requirements given in section 4.2.4.
A documented procedure QSP 4.2.3, listed in the Master Index (QSP L1), defines the controls
a. To approve documents prior to issue,
b. To review, revise, and approve documents by the same functions that performed the original review and approval.
c. To ensure that changes and the current revision status of documents are identified,
d. To ensure that the relevant versions of applicable documents are available at point of use,
e. To ensure that documents remain legible and readily identifiable,
f. To ensure that documents of external origin determined to be necessary for the planning and operation of our QMS are identified and their distribution controlled. Documents of external origin will include all customer supplied drawings, manuals, specification sheets, etc., and
g. To prevent the unintended use of obsolete documents, and to apply suitable identification to them if they are retained for any purpose.

4.2.4 Control of Records (API Q1, 9th Edition Section 4.5)
Lamons controls records established to provide evidence of conformity to requirements and of the effective operation of the Quality Management System.

Records required by the applicable industry product standard(s) including those originating from outsources activities shall be retained for not less than the period of time specified by the industry standard or five years, whichever is longer. A documented procedure QSP 4.2.4, is established to define the controls needed to collect, control, maintain, retain, identify, store, protect, dispose of, and retrieve records. Records shall be legible, readily identifiable, and retrievable.

4.2.5 Use of External Documents in Product Realization (API Q1, 9th Edition Section 4.4.4)
Lamons integrates the requirements of API and other external specifications, including addenda, errata, and updates, in the manufacture of the products when these external specifications are used in the manufacture of the product. A documented procedure, QSP 4.2.5, has been established to define the integration of these requirements into the product realization process and any other affected processes.

4.3 Context of the Organization

4.3.1 Understanding the Organization and Its Context
The external and internal issues that are relevant to Lamons’ purpose, strategy and goals defines the context of Lamons. Top Management determines which issues are relevant based upon potential issues that can have an effect on the approach to developing and achieving the objectives. Lamons utilizes the SWOT Analysis in the internal document QSF 240-SWOT to identify both positive and negative external and internal factors. The Internal Factors are those listed as strengths and weaknesses and the External Factors are those listed as opportunities and threats. These factors are monitored and reviewed during the Management Review. If changes are deemed necessary in regard to the relevant issues, as a result of the review, those will be documented in the Management Review Meeting Minutes and be reflected on QSF 240, accordingly.

4.3.2 Understanding the Needs and Expectations of Interested Parties
Lamons has identified interested parties as those who can affect or potentially affect the ability to provide products meeting the customer, statutory and regulatory requirements. Those interested parties and their respective requirements are identified in the internal document QSF 241-Interested Parties. The information regarding interested parties and requirements is monitored and reviewed during the Management Review. Any resulting changes are noted in the meeting minutes and recorded in QSF 241. In addition, consideration for the interested parties requirements are provided through the Sales Order Entry and QA Review Process defined in Work Instructions WI 001 Contract Review – Order Entry.
5. LEADERSHIP

5.1 Management Commitment

Top management provides evidence of its commitment to the development and implementation of the Quality Management System and continually improving its effectiveness by; establishing quality policy and objectives; ensuring the availability of necessary resources; transmitting the importance of satisfying the requirements of customers as well as statutory and regulatory requirements; and conducting management review to ensure the continual effectiveness of Quality Management System.

Approval of this Quality Management System Manual signifies Lamons Management’s commitment to the further development and continuous improvement of the Lamons Quality Management System.

5.2 Customer Focus

Satisfying the customer’s requirements is the key of realizing production, product quality management and continual improvement of Lamons. Top management ensures that customer requirements are determined and met with the aim of enhancing customer satisfaction. (See section 7.2 and section 8.2.1).

5.3 Quality Policy (API Q1, 9th Edition Section 4.1.2)

Quality Policy (QMS-0801 Corporate Quality Policy) is one of the important elements of general management policies and the quality commitment to the customer. Top management ensures the quality policy is appropriate to Lamons; provides a framework for establishing and reviewing quality objectives; includes a commitment to comply with requirements and continually improve the effectiveness of the QMS and communicated and understood within Lamons. Top management is responsible for the review of quality policy to ensure its continual suitability.

Approval of the Quality Policy by top Management is recorded in the Management Review report.

5.4 Planning (API Q1, 9th Edition Section 5.2)

5.4.1 Quality Objectives (API Q1, 9th Edition Section 4.1.3)

Top Management ensures that Quality Objectives QMS-0802, including those needed to meet requirements for product, are established at relevant function and levels within Lamons. Quality Objectives are measurable and consistent with the Quality Policy.

5.4.2 Quality Management System Planning (API Q1, 9th Edition Section 4.1.4)

Top Management ensures that:

a. The planning of the Quality Management System is carried out in order to meet the requirements specified in section 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.

5.5 Responsibility, Authority, and Communication (API Q1, 9th Edition Section 4.1 & 4.2)

5.5.1 Responsibility and Authority (API Q1, 9th Edition Section 4.2.2)

Top Management ensures that responsibilities and authorities are defined and communicated within Lamons.

5.5.2 Management Representative (API Q1, 9th Edition Section 4.2.3)

Top management shall appoint a Global Quality Director as Management Representative(s) who, 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,

c. Ensuring action(s) needed to minimize the likelihood of the occurrence of nonconformities are initiated.
d. Ensuring to promote the awareness of customer requirements throughout Lamons.

e. Responsibilities will also include liaison with external parties on matters related to the Quality Management System.

5.5.3 Internal Communication (API Q1, 9th Edition Section 4.1.5.1)

Top Management ensures that appropriate communication processes are established within Lamons and that communication takes place regarding the effectiveness of the Quality Management System.

5.6 Management Review (API Q1, 9th Edition Section 6.5)

5.6.1 General

Top Management reviews the Quality Management System at planned intervals, 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 Quality Policy and Objectives. The management review shall be performed at least every 12 months and the review records are maintained as defined in section 4.2.4.

5.6.2 Management Review Inputs (API Q1, 9th Edition Section 6.5.2)

The input for Management Review includes information on:

a. Results of audits and implementation effects of improvement action,
b. Analysis of customer satisfaction and feedback from relevant interested parties,
c. Review of analysis of process and product conformity, including trends of product nonconformity,
d. Trends nonconformities and corrective action

e. Monitoring and measurement result

f. The status of preventive and corrective actions;

g. Review the effectiveness of actions resulting from previous Management Reviews,
h. Changes in external and internal issues that are relevant to the Quality Management System, including changes to legal and other applicable requirements,
i. Applicable quality and industry standards, such as ASTM, ASME, API, ISO, etc.,

j. Analysis of supplier performance,
k. The extent to which quality objective have been met

l. Results of risk assessment,
m. Recommendations / Opportunities for improvement, and

n. Reports and analysis of field nonconformities, if applicable.

o. The adequacy of resources;
p. The effectiveness of actions taken to address risks and opportunities.

5.6.3 Management Review Outputs (API Q1, 9th Edition Section 6.5.3)

The output from Management Review includes any decision and action related to:

a. Improvement of the effectiveness of Quality Management System and its processes, including any required changes to the processes and any decisions and actions,
b. Improvement of product to meet customer requirements, and
c. Resources needed

Top management shall review and approve the output of management reviews. These management reviews shall be documented, and records maintained as defined in section 4.2.4.
6. RESOURCE MANAGEMENT

6.1 Provision of Resources *(API Q1, 9th Edition Section 4.3.1)*

Management determines and provides resources needed to:

- Implement & maintain the Quality Management System and continually improve its effectiveness;
- Enhance customer satisfaction by meeting the customer requirements.

6.2 Human Resources *(API Q1, 9th Edition Section 4.3.2)*

6.2.1 General

Personnel performing work affecting conformity to product requirements shall be competent based on appropriate education, training, skills, and experience needed to meet product requirement and customer requirements. Evidence of determining the competence of personnel shall be recorded and maintained.

6.2.2 Competence, Awareness, and Training *(API Q1, 9th Edition Section 4.3.2.2 & 4.3.2.3)*

Lamons shall:

a. Determine necessary competence for personnel performing work affecting conformity to product requirement and the frequency of training required to maintain their training skills,

b. Provide on the job training for all new and current employees to support the processing of customer specified requirements which shall include any modified jobs that affect product quality,

c. Ensure that our personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives,

d. Review training records and effectiveness during annual performance evaluations to ensure the necessary competence is achieved,

e. Identify training needs and provide training for personnel per a written procedure, listed in the Master Index (QSP L1), and

f. Maintain appropriate records of education, training, skills and experience.

6.3 Infrastructure

Lamons will determine, provides, manages, and maintain the infrastructure needed to achieve conformity to product requirements and environmentally friendly workplace. Infrastructure includes, as applicable:

a. Building, workspace and associated utilities,

b. Process equipment (both hardware and software),

c. Supporting services (such as transport, communication, or information systems), and

6.4 Work Environment *(API Q1, 9th Edition Section 4.3.3)*

The work environment needed to achieve conformity to product requirements and environmentally friendly workplace is determined and managed.

a. Conditions under which work is performed such as physical, environmental, or other factors.

7. PRODUCT REALIZATION

7.1 Planning of Product Realization *(API Q1, 9th Edition Section 5.2)*

Lamons 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 section 4.1).

Quality objectives and requirements for the product;

a. The need to establish processes, documents, resources, work environment management specific to the product; and customer specific requirements;

b. Legal and other applicable requirements;
c. Contingencies planned for based on risk assessment;
d. Required verification, validation, monitoring, measurement, inspection and test activities specific to the product and the criteria for product acceptance;
e. Management of change (see QSP 12.0); and
f. Records needed to provide evidence that the realization processes and the resulting product meet requirements in section 4.2.4.

The output of this planning in the form of an “Order” which specifies the processes and resources to be applied to meet a specific product, project or contract, which can also be referred to as a Quality Plan. This output shall be documented and updated as changes occur. These plans shall be maintained in a structure suitable to meet the organization’s method of operation.

When product requirements are provided from external sources, such as customer-supplied documentation or specifications, those requirements are inputted into the Enterprise Resource Planning (ERP) / SYTELINE system. A unique Item Number is assigned to these requirements that become a permanent record for that customer in the product realization process.

7.1.1 Risk Assessment and Management (API Q1, 9th Edition Section 5.3)

Lamons maintains a documented procedure to identify and control risk associated with impact on delivery and quality of product. This procedure identifies the techniques, tools and their application for risk identification, assessment, and mitigation. All requirements related to Risk Assessment and Management is reviewed in accordance with documented procedure (QSP 5.3), listed in the Master Index QSP L1).

Risk assessment can include consideration of severity, detection methods and probability of occurrence.

a. Facility or equipment availability and maintenance
b. Supplier performance and material availability

Risk assessment associated with product quality includes, as applicable

a. Delivery of nonconforming product
b. Availability of competent personnel

The output of risk assessment may be used in the development of contingency plans (see QSP 5.5.1) Risk assessment can be an activity associated with corrective and/or preventive action.

7.1.2 Contingency Planning (API Q1, 9th Edition Section 5.5)

Lamons maintains a documented procedure (QSP 5.5.1) for contingency planning needed to address risk associated with impact on delivery and quality of product. Contingency planning is based on assessed risks QSP 5.3 and output is documented and communicated to the relevant personnel and updated as required.

Contingency planning shall include at a minimum:

- Actions required in response to significant risk scenarios to mitigate effects of disruptive incidents,
- Identification and assignment of responsibilities and authorities,
- Internal and External communication controls.

7.2 Customer Related Processes (API Q1, 9th Edition Section 5.1)

7.2.1 Determination of Requirements Related to Product (API Q1, 9th Edition Section 5.1.2)

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 specific or intended use, where known,
c. Legal and other applicable requirements;
d. Statutory and regulatory requirements applicable to the product, and
e. Any additional requirements not stated but considered necessary by Lamons for the provision of the product.

7.2.2 Review of Requirements Related to Product (API Q1, 9th Edition Section 5.1.3)

A review of the requirements related to the product is conducted prior to any commitment to supply a product to the customer (e.g., submission of tenders, acceptance of orders or contracts, acceptance of changes to contracts or orders). This review ensures that:

- Product requirements are identified and documented
- Contract or order requirements differing from any previously expressed are resolved, and
- The capability to meet the defined requirements are confirmed before acceptance has been verified.

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

When product requirements are changed, relevant documents are amended, and relevant personnel are made aware of the changed requirements.

All requirements related to the product are reviewed in accordance with documented procedures QSP 7.2, listed in the Master Index (QSP L1). Records of contract reviews and actions arising from the review are maintained (see section 4.2.4).

7.2.3 Customer Communication (API Q1, 9th Edition Section 5.10.4)

Effective arrangements for communicating with customers are determined and implemented in relation to:

a. Product information,
b. Enquiries, contracts or order handling, including amendments,
c. Customer feedback, including customer complaints, and
d. When required by contract, provide information required by product quality plans and any subsequent changes to these plans.

7.3 Design and Development (API Q1, 9th Edition Section 5.4)

As stated in the Introduction, Lamons has identified Section 8.3 of ISO 9001:2015 and Section 5.4 of API Q1 9th Edition as an exclusion and/or not applicable, as defined within the Scope of API Q1, with the exception of API 17D Ring Joint Gaskets. Lamons does not design or develop any product nor does Lamons subcontract any portion thereof. However, API does not allow the exclusion of 17D Products in Advisory 6 and therefore Lamons has re-established Procedure QSP 7.3, Design and Development, for 17D Ring Joint Gaskets. Note: This procedure was previously implemented and approved by the appropriate personnel and agencies at that time:

The Lamons Procedure includes the attributes listed in API Q1 Section 5.4, as follows;

- Planning
- Inputs
- Outputs
- Review
- Verification and Final Review
- Validation and Approval

7.4 Purchasing (API Q1, 9th Edition Section 5.6)

7.4.1 Purchasing Process (API Q1, 9th Edition Section 5.6.1)

Lamons purchasing and other outsourced activities are conducted in accordance with written documents QSP 7.4 listed in the Master Index (QSP L1). Purchased product will conform to the specified purchased requirements. The type and extent of control applied to the supplier and the purchased product shall be dependent upon the effect of the purchased product on subsequent product realization or the final product.
7.4.1.1 For purchases of non-critical products, components, or activities, Lamons will evaluate and select suppliers based on their ability to supply product and services in accordance with organizations requirements. Selection, evaluation, and re-evaluation are established per written document procedure QSP 7.4.1 Supplier Qualification Assessment, and include one of the following:

a. Inspection of supplier’s product upon delivery,
b. Analysis of supplier’s conformance to purchasing requirements,
c. Verification that the supplier’s Quality Management System conforms to the standard or technical specification,
d. Inspection at supplier’s facility, when needed.

Records of the results of the evaluation and any necessary actions arising from the evaluation are maintained (see section 4.2.4).

7.4.1.2 For the purchase of critical products, components or activities, including special processes and raw material, Lamons will perform an initial evaluation for each supplier to ensure the supplier complies with the applicable requirements. (See section 7.5.2).

In addition to the assessment in the above Section 7.4.1.1, Lamons shall perform a supplier evaluation for critical purchases of raw material and services for API 20E and 20F Bolting Orders. The evaluation and qualification of procurement sources for raw material and services have been established in the Lamons Procedure QSP 7.4.2.

A reevaluation of critical suppliers shall be performed no less than every three years using the same criteria as the initial evaluation.

Records of the evaluation and objective evidence shall be maintained, along with any actions arising from the evaluation(s). (see Section 4.2.4)

7.4.2 Purchasing Information (API Q1, 9th Edition Section 5.6.2)

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

a. Requirements for approval of product, procedures, processes and equipment,
b. Requirements for qualification of personnel, and
c. Quality Management System requirements
d. The type, class, grade or other precise identification, and
e. The title or other positive identification, and applicable issues of specifications, drawings, process requirements, inspection instructions and other relevant technical data.

Adequacy of specified purchase requirements will be ensured prior to communication with the supplier.

7.4.3 Verification of Purchased Product (API Q1, 9th Edition Section 5.6.3)

The inspection or other activities necessary for ensuring that purchased product meets specified purchase requirements is performed in accordance with written documents QSP 7.4.3 listed in the Master Index (QSP L1).

When verification at the supplier’s premises is intended either by Lamons or its customer, verification arrangements and method of product release is stated in the purchasing information. Records of verification activities are maintained (see section 4.2.4).

7.5 Production and Service Provision (API Q1, 9th Edition Section 5.7)

As stated in the Introduction, Lamons has identified the Servicing Provision of Section 8.5 of ISO 9001:2015 and Section 5.7 (5.7.1.2) of API Q1 9th Edition as an exclusion and/or not applicable, as defined within the Scope of API Q1. Lamons does not service any product after the sale and delivery, within the scope of the QMS.
7.5.1 Control of Production Provision (API Q1, 9th Edition Section 5.7.1.1)

Production is planned and carried out under controlled conditions in accordance with written documents QSP 7.5.1 listed in the Master Index (QSP L1). These conditions include, as applicable:

a. The availability of information that describes the characteristics of the products or service provided,

b. Implementation of the product quality and product control plan, when applicable,

c. The availability of process control documents and work instructions, where necessary,

d. The availability and use of suitable production, testing, monitoring and measurement equipment,

e. The implementation of monitoring and measurement activities, and

f. The implementation of product release, delivery, and post-delivery activities.

Process controls are documented and performed in accordance with written documents QSP 7.5.1 listed in the Master Index (QSP L1).

7.5.2 Validation of Processes for Production and Service Provision (API Q1, 9th Edition Section 5.7.1.5)

All processes identified by applicable product specifications requiring validations or where the resulting output cannot be verified by subsequent monitoring or measurement, in which case deficiencies may become apparent only after the product is in use, shall be validated.

To ensure Lamons validates processes for production where the resulting output cannot be verified by subsequent monitoring or measurement, Lamons has established the written procedure QSP 7.5.2, Validation of Processes for Production & Service Provision.

Validation demonstrates the ability of these processes to achieve planned results. Lamons has established arrangement of these processes including, as applicable:

a. Required equipment;

b. Qualification of personnel;

c. Use of specific methods, including identified operating parameters;

d. Identification of acceptance criteria,

e. Requirements for records, (see section 4.2.4) and

f. Revalidation.

Lamons shall validate those processes identified by the applicable product specification as requiring validation. If processes are not identified, or there is no product specification involved, the processes requiring validation shall include, non-destructive examination, welding, and heat treating, as a minimum, if applicable to the product.

For specialty bolting manufactured and supplied in accordance with API 20E & 20F, all special processes shall be outsourced. The following processes are considered special and require validation:

a. NDE (nondestructive examination)

b. Heat treating

c. Metallurgical examination

d. Plating, when invoked by the customer

For ring joint gaskets which are manufactured and supplied in accordance with API 6A or API 17D, the processes that require validation are:

a. NDE (nondestructive examination), for welded products.

b. Welding, when required as a part of the manufacturing process.

c. Plating, when invoked by the customer will be outsourced only.
7.5.3 Identification and Traceability (API Q1, 9th Edition Section 5.7.3)

When appropriate, the product is identified by suitable means throughout product realization in accordance with documented procedures QSP 7.5.3 listed in the Master Index (QSP L1).

The product status is identified with respect to monitoring and measurement requirements throughout product realization.

When traceability is a requirement, the unique identification of the product is controlled and recorded from receipt, during all stages of production, delivery, and installation, as required by Lamons, our customer, and the applicable product specifications. Records are maintained (see section 4.2.4).

Requirements for application, maintenance, or replacement of identification and traceability marks and records are controlled in documented procedures listed in the Master Index (QSP L1).

7.5.4 Customer Supplied Property (API Q1, 9th Edition Section 5.7.5)

As stated in the Introduction, Lamons has identified the Customer Supplied Property in Section 8.5.3 of ISO 9001:2015 and Section 5.7.5 of API Q1 9th Edition as an exclusion and/or not applicable, as defined within the Scope of API Q1. Lamons does not perform any processes to customer supplied property, within the scope of the QMS.

7.5.5 Preservation of Product (API Q1, 9th Edition Section 5.7.6)

To maintain conformity to requirements, Lamons preserves the product during internal processing and delivery to the intended destination in accordance with written documents QSP 7.5.5 listed in the Master Index (QSP L1). As applicable, preservation includes identification, handling, packaging, storage, protection of product or constituent parts, and periodically assessing the condition of product or constituent parts for deterioration.

7.5.6 Product Quality Plans (API Q1, 9th Edition Section 5.7.2)

When required by contract, the organization shall develop a product quality plan that specifies the processes of the quality managements system (including the product realization process) and the resources to be applied to a product.

The product quality plan (QP), inspection test plan (ITP), manufacturing process specification (MPS), process control plan (PCP) or quality activity plan (QAP) required by contract shall address each of the following as a minimum:

a. Description of the product to be manufactured;

b. Required processes and documentation, including required inspections, tests, and records, for conformance with requirements;

c. Identification and reference to control of outsourced activities;

d. Identification of each procedure, specification, or other document referenced or used in each activity; and

e. Identification of required hold, witness, monitor and document review points.

These product quality plans and any revisions shall be communicated to the customer. Records are maintained per (section 4.2.4).

7.5.7 Product Inspection/Test Status (API Q1, 9th Edition Section 5.7.4)

Lamons maintains a documented procedure listed in the Master Index (QSP L1), which defines the process being used to identify product inspection and/or test status throughout the product realization process. This status will indicate the conformity or nonconformity of product with respect to the inspections and/or tests performed.

7.6 Control of Monitoring and Measuring Devices (API Q1, 9th Edition Section 5.8)

Lamons determines the monitoring and measurement to be undertaken and the monitoring and measurement equipment needed to provide evidence of conformity of product to the order requirements.
Processes are established and documented in written documents listed in the Master Index (QSP L1) to ensure that monitoring and measurement activities can be carried out and are carried out in a manner that is consistent with the monitoring and measurement requirements.

When necessary to ensure valid results, measuring equipment is to;

a. Be calibrated and/or verified, or both, at specified intervals, or prior to use, against measurement standards traceable to international or national standards. When no standards exist, the basis used for calibration or verification is recorded,

b. Have the calibration status identifiable by the user for the activities being performed at all times,

c. Be safeguarded from adjustments that would invalidate the measurement result or the calibration status,

d. Be protected from damage and deterioration during handling, maintenance and storage; and.

e. Be used under environmental conditions that are suitable for the calibrations, inspections, measurements, and tests being carried out.

Lamons assesses and records the validity of the previous measuring results when the equipment is found not to conform to requirements. In such cases, appropriate action is taken on the equipment and any product affected. Records of the results of calibration and verification are maintained (see section 4.2.4).

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

7.7 Inspection and Testing (API Q1, 9th Edition Section 5.7.7)

Lamons has established procedures QSP 8.2.4 for the inspection and testing used to verify that product requirements have been meet. These procedures include requirements for in-process, final inspection and testing and is documented in the written documents listed in the Master Index (QSP L1) to ensure that records of all in-process and final inspection and testing results are maintained (see section 4.2.4).

7.8 Preventive Maintenance (API Q1, 9th Edition Section 5.7.8)

Lamons plans and schedules the preventive maintenance of equipment used in product realization. The processes that have been established for preventative maintenance are documented in the written document procedure QSP 5.7.8 to ensure these activities conform to the requirements defined in latest revision of ISO 9001, and API Q1.

8. MEASUREMENT, ANALYSIS, AND IMPROVEMENT

8.1 General

Lamons plans and implements the monitoring, measurement, analysis and improvement processes, to demonstrate conformity of product requirements, to ensure conformity and continually improve the effectiveness of the Quality Management System. This includes determination of applicable methods, including the techniques being used for the analysis of data.

8.2 Monitoring and Measurement (API Q1, 9th Edition Section 6.2)

8.2.1 Customer Satisfaction (API Q1, 9th Edition Section 6.2.1)

As one of the measurements of the performance of the QMS, Lamons monitors the information related to customer perception as to whether Lamons has met customer requirements. The methods used for determining customer satisfaction are completed and records of this information maintained in accordance with written documents listed in the Master Index (QSP L1).

8.2.2 Internal Audit (API Q1, 9th Edition Section 6.2.2)

Lamons conducts internal audits at planned intervals to validate the Quality Management System and conforms the planned arrangements to meet the requirements of ISO and API Q1, and to determine the Quality Management System requirements are effectively implemented and maintained.

The Audit program is planned, taking into consideration the status and importance of processes and areas to be audited, as well as the results of previous audits. The audit criteria, scope, frequency and methods are defined in written documents QSP 8.2.2. Selection of auditors and conducting of audits is done in such a way that it ensures objectivity of the audit and maintains the impartiality of the audit process. Auditors do
not audit their own work. Written document (QSP 8.2.2 Internal Audit) Procedure is established to define the responsibilities and requirements for planning and conducting audits, establishing records, reporting results, and expected response times for addressing detected nonconformities. Records of the audit and their results are maintained (section 4.2.4).

The Department Manager(s) of an area being audited are responsible for taking immediate necessary corrective action to eliminate nonconformities and their causes detected during an audit. Results of internal audits and the status of corrective actions shall be reported in the management review. Follow-up activities include the verification of the actions taken and the reporting of verification results (section 8.5.2).

8.2.3 Monitoring and Measurement of Processes (API Q1, 9th Edition Section 6.2.3)

Lamons 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 the results are not achieved, correction and preventive action shall be taken, as appropriate to address the failure of the process. Measurement of processes is achieved through measurements as identified in Process Details chart in section 4 and through audits.

8.2.4 Monitoring and Measurement of Product

Lamons monitors and measures the characteristics of the product to verify that product requirements are fulfilled in accordance with the written procedures (QSP 8.2.4 Inspection and Testing of Product). This is carried out at appropriate stages of the product realization process and the planned arrangements as identified on one or more of the following, where applicable:

a. The Traveler,
b. Engineering Drawings, or
c. The inspection plans (Job Orders)

Evidence of conformity with the acceptance criteria is maintained. Quality records indicate the person authorizing release of product for delivery to the customer (see section 4.2.4).

Product delivery to the customer does not proceed until all the planned arrangements have been satisfactorily completed, unless otherwise approved by a relevant authority and, where applicable, by the customer.

Inspection and testing shall be done in accordance with the written procedures QSP 8.2.4 listed in the Master Index (QSP L1). At planned stages of the product realization process, personnel perform final acceptance inspection other than those who performed or directly supervised production of the product.

8.3 Control of a Nonconforming Product (API Q1, 9th Edition Section 5.10)

Lamons ensures that product which does not conform to product requirements is identified and controlled to prevent its unintended use or delivery to the customer. The controls and related responsibilities and authorities for dealing with nonconforming products are established in written documents QSP 8.3 Control of Nonconforming items. Lamons addresses nonconforming products in one or more of the following ways:

a. By taking action to eliminate the detected nonconformity,
b. By taking action to preclude its original intended use or application,
c. By authorizing its use, release, or acceptance under concession by a relevant authority and, where applicable, by the customer,

When a nonconforming product is detected after delivery or use has started, Lamons takes action appropriate to the effects, or potential effects, of the nonconformity. In the event a product is delivered that does not conform to design acceptance criteria, Lamons will notify the customer(s) and maintain records of such notifications.

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

When nonconforming product is corrected, it is subject to re-verification to demonstrate conformity to the requirements.
The documented procedure QSP 8.3 for nonconforming product also includes requirements for identifying, documenting and reporting incidents of field nonconformities or product failures. The same procedure ensures the analysis of field nonconformities, provided the product or documented evidence supporting the nonconformity is available to facilitate the determination of the cause.

8.4 Analysis of Data (API Q1, 9th Edition Section 6.3)
Lamons identifies, collects, and analyzes appropriate data to demonstrate the suitability and effectiveness of the Quality Management System and to evaluate continual improvement of the Quality Management System can be made. This includes data generated as a result of monitoring, measurement, internal audits, management review, and other relevant sources. Lamons analyzes the data in accordance with documented procedures (QSP 8.4 Analysis of Data) to provide information on:

a. Customer Satisfaction,
b. Conformance to product requirements,
c. Quality objectives,
d. Supplier performance,
e. Nonconformities and product failures identified after delivery or use, provided the product or documented evidence is available to facilitate the determination of the cause,
f. Characteristics and trends of processes and products including opportunities for preventive action.
Lamons will use this data to evaluate where continual improvements may be made to improve the Quality Management System effectiveness.

8.5 Improvement (API Q1, 9th Edition Section 6.4)

8.5.1 Continual Improvement
Lamons shall continually improve the effectiveness of the Quality Management System with the use of the quality policy & objectives, management review, quality audit, analysis of data, relevant corrective and preventive actions.

8.5.2 Corrective and Preventive Action (API Q1, 9th Edition Section 6.4.2 and 6.4.3)
Lamons takes corrective actions and preventive actions both internally and throughout the supply chain to eliminate the causes of nonconformities in order to minimize the likeliness of these from occurring and eliminate the causes of potential nonconformities in order to minimize the likeliness of their occurrence.
Lamons has established a documented procedure, QSP 8.5.2, for corrective and preventive action which defines the requirements, as follows:

Corrective Action
a. Reviewing process 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;
f. Reviewing corrective action taken;
g. Ensuring the effectiveness of the corrective action;
h. Identifies response times for addressing corrective actions

Preventive Action
a. Identifying a potential nonconformity and its potential causes;
b. Evaluating the need for preventive action, including any immediate or short-term action required, to prevent occurrence of a nonconformity;
c. Identifying the timeframe and responsible person(s) for implementing a preventive action;
d. Identifying opportunities for improvements;
e. Reviewing the effectiveness of the preventive action taken; and
f. Following the MOC process when the preventive action requires new or changed controls within the quality management system;
g. Records of activities for the control of potential process nonconformities shall be maintained.

9. **API MONOGRAM REQUIREMENTS**

Procedure QSP 7.0 API 20E & 20F Monogram Requirements, for 20E & 20F Bolting, and Work Instructions WI 031 Marking Procedure for Ring Gaskets, all types, has been established to define the criteria for:

   o Application of the API Monogram, to include the license number and the date of manufacture.
   o Removal of the API Monogram, if the product is subsequently found to be in nonconformance with the API specified requirements.
   o Defining the responsible personnel for application and removal of the API Monogram

10. **MANAGEMENT OF CHANGE**

10.1 General

Procedure QSP 12.0 has been developed to address modifications to the plant and equipment at Lamons. The process for management of change (MOC) will be maintained to ensure the integrity of the QMS is maintained when changes to the QMS are planned and implemented. Lamons will identify the potential risks associated with the change and any required approvals prior to the introduction of such changes. Records of MOC will be maintained.

10.2 MOC Implementation *(API Q1, 9th Edition Section 5.11.2)*

The MOC process for any of the following that may negatively impact the quality of the product:

   a. Changes in the organization structure
   b. Changes in key or essential personnel
   c. Changes in critical suppliers
   d. Changes to the QMS, including changes resulting from CARs and PARs

10.3 MOC Notification *(API Q1, 9th Edition Section 5.11.3)*

Lamons shall notify relevant personnel, including the customer when required by contract of the change and residual or new risk due to changes that have either been initiated by them or the customer.

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<th>Rev No.</th>
<th>Description of Change</th>
<th>MOC No.</th>
<th>Date</th>
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<td>00 - 11</td>
<td>Transferred revision history information for (Rev 00-08 in MOC09092016); Rev 09-11 to MOC-0618</td>
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<td>12</td>
<td>Release of section updates to meet ISO 9001:2015 requirements.</td>
<td>MOC-0618</td>
<td>09/28/2017</td>
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<td>13</td>
<td>Revised Section 1.3 to define exclusions that are allowed for design and those that are not allowed. Include reference to 17D requiring Design and Development. Added Section 7.5 Design and Development back into the QMS Manual to meet the requirements of Advisory 6 of API Q1. Revised Section 7.5.2 to include the processes which require validation for 6A and 17D ring joint gaskets. Revised Section 9 to include a reference to the procedures for 6A and 17D Ring Joint gaskets, in addition to 20 E Bolting referenced previously.</td>
<td>MOC-0647</td>
<td>01/12/2018</td>
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<td>14</td>
<td>Revised Sections 7.4.1, 7.5.2 and 9 to include the API 20F Specification.</td>
<td>MOC-0693</td>
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<td>Revised Section 4.1.1 and added Section 7.4.1.2 to include the specific criteria for Critical Supplier’s Requirements, per API Q1 9th Edition.</td>
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