



**1111-5 Gorham Street
Newmarket, Ontario
L3Y 8X8**

QUALITY MANAGEMENT SYSTEM POLICY MANUAL

ISO 9001:2000

ISSUED: JANUARY 2008

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		Revision No. 1	Revised By: Larry Denham
			Approved By: Ted Denham



QUALITY MANAGEMENT SYSTEM (QMS) POLICY MANUAL

REVIEWED BY: _____
LARRY DENHAM

TITLE: PRESIDENT OPERATION

DATE: JANUARY 2008

APPROVED BY: _____
TED DENHAM

TITLE: QUALITY ASSURANCE MANAGER

DATE: JANUARY 2008

ISSUED BY: LARRY DENHAM
TITLE: PRESIDENT OPERATION
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1.0 QMS Policy Manual Distribution and Control Information

This Manual is issued under controlled and uncontrolled conditions.

Controlled copies bear a control number and are subject to updating.

Uncontrolled copies do not bear a control number and shall be stamped “Uncontrolled Copy”. Uncontrolled copies are not updated.

A record of Manuals out on loan (Form # LJT 001 Record of Manuals out on loan), is maintained by the LJT Quality Assurance Manager and kept in the Quality Assurance Department filing system.

The information in this Manual is proprietary to the management of LJT Manufacturing.

This Manual is not to be copied in any part or form or communicated for use by any other party.

LJT Manufacturing Quality Assurance Manager maintains absolute responsibility for the issue, maintenance and recall of this Manual.

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2.0 Organization Profile and Vision

2.1 Profile

LJT Manufacturing, located at 1111-5 Gorham Street was established in 2004 producing small and medium complex precision components utilizing state of the art CNC Lathe with multi Axis Milling capabilities. LJT's experience, modern equipment and skilled work force have been the foundation for catering to a variety of industries, including the aerospace and defence industries.

2.2 Mission Statement

***Our mission is to serve
LJT customers in a professional, responsive and cost effective manner.***

***To deliver a quality product as promised, assuring the confidence with our customer
to provide a relationship that will endeavour***

2.3 Vision Statement

Our vision is:

- 2.3.1 To be the leader and centre of expertise for total machining solutions.
- 2.3.2 To be highly respected for our integrity, professionalism, technical knowledge, responsive service, innovative solutions, quality products and continuous improvement programs.
- 2.3.3 To be widely recognised as an efficient and effective supplier, giving competitive value to customers.

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3.0 QMS Policy Manual Issuance and Revision Record

3.1 Issuance

The Quality Assurance Manager is responsible for developing and maintaining the Quality Management System Policy Manual and its associated documentation. Prior to issue and release of the Quality Management System documentation, it is reviewed for adequacy, correctness and conformance with the quality policies, by the department managers, personnel directly affected by the documents and finally the Quality Assurance Manager.

3.2 Revision

Revisions to the Quality Management System Policy Manual and associated documentation may be initiated by anyone in the Organization but may only be issued by the Quality Assurance Manager as defined in section 4.5, Document and Data Control. Documents are reviewed by the department managers and personnel directly affected by the documents. Documents are approved prior to issue by the President Operation. The Quality Assurance Manager is responsible for co-coordinating the review process.

Each page of the Quality Management System Policy Manual contains a revision number, which is controlled and applied by the Quality Assurance Manager. Each page of the Manual contains a control block which provides all pertinent information and status regarding the documentation, including the following:

- 3.2.1 Section within the quality management system documentation where the page belongs (i.e. Quality Management System Policy Manual or Quality Procedures Manual)
- 3.2.2 ISO 9001 clause number referenced
- 3.2.3 Page number, and total number of pages that comprise the entire manual
- 3.2.4 Revision date using format: month, year
- 3.2.5 Revision number
- 3.2.6 Name of person who revised the document
- 3.2.7 Name of the person who approved the document
- 3.2.8 the Organization's address

3.3 Records

Quality Management System Policy Manual and associated documentation revision records will be maintained on Form LJT002 (Appendix A, Quality System Forms).

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4.0 Quality Management System (QMS)

General

This section describes the Quality Management System of LJT herein after called “The Organization”.

4.1 Management Responsibility

Senior management of The Organization is responsible for the development, implementation and maintenance of the Quality Management System, its policies, and associated procedures.

A QMS Management Team has been formed to manage the system. The following personnel comprise the Team membership: President Operation, Quality Assurance Manager, Plant Manager, Engineering Manager and the Purchasing Agent. Other LJT personnel participate as needs dictate.

4.1.1 Quality Policy and Objectives

a) **Policy:**

It is the policy of The Organization to maintain a Quality Management System satisfying applicable statutory, regulatory and customer requirements, including those defined by the ISO standards as a means of ensuring conformance of delivered products and effecting continual improvement of the Quality Management System.

b) **Scope:**

The Quality Management System Policy Manual and Quality Procedures Manual (which includes all appendices and associated quality management system documentation) provide the documented controls to ensure that the Quality Policy is achieved at a level consistent with the requirements. It is the responsibility of all employees to work together across all disciplines and throughout all phases of work to meet The Organization’s quality policy, objectives for quality, commitment to quality, organizational goals, and the expectations and needs of our customers. Managers will provide and record on the job training (Procedure QP4.18 Training Quality Procedure). The Quality Policy is available to all employees through respective supervisors. Implementation and maintenance are validated by Internal Quality Audits (4.17) and Management Review (4.1.3).

c) **Objectives for Quality:**

The QMS Management Team has developed measurable corporate quality objectives (refer to Appendix B) consistent with the quality policy. The objectives are made known throughout the organization. Sub-level objectives and activities are aligned to contribute toward achievement of the corporate objectives.

The objectives are monitored and measured. Adjustment to objectives or processes is performed when required.

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d) Commitment to Quality:

Our commitment to quality is by applying an ISO 9001 quality management system to demonstrate our ability to supply conforming product to our customers, to the degree specified in customer contracts, statutory and regulatory requirements. We are committed to ensuring the resources and facilities are available in order to achieve our objectives.

e) Organizational goals and the expectations and needs of The Organization’s Customers:

Our primary goal is achieving customer satisfaction by preventing nonconformity at all stages from receipt of contract through to delivery of product. Our expectations are to be competitive in pricing and meeting customers’ delivery dates by optimizing the implementation of our quality management system.

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4.1.2 Organizational Structure, Responsibilities and Authorities

4.1.2.1 LJT Responsibilities and Authorities

Senior management ensures the responsibilities and authorities are developed and communicated to the organization's personnel via the quality documentation, internal communications processes, job descriptions, reporting structures, meetings, organization charts, etc.

4.1.2.1.1 President Operation

- The President Operation directs all operations of The Organization, including the implementation of the Quality Management System, satisfying ISO 9001.
- The President Operation or a delegate approves all quotations and ensures that all contract requirements are met according to this Quality Management System Manual and associated procedures.
- The President Operation appoints the Quality Assurance Manager and ensures the independence of the Quality Assurance Department from production and manufacturing.
- Functions as a member of the QMS Management Team.

4.1.2.1.2 Quality Assurance Manager

- The Quality Assurance Manager reports to the President Operation and maintains the Quality Management System.
- The Quality Assurance Manager:
 - a- Initiates action to prevent the occurrence of any non-conformances relating to the product, process and Quality Management System.
 - b- Identifies and records problems relating to the product, process and Quality Management System.
 - c- Initiates, records and provides solutions through designated channels.
 - d- Verifies the implementation of solutions.
 - e- Controls further processing, delivery or installation of non-conforming items or services until the deficiency or unsatisfactory condition has been corrected.
 - f- Functions as a member of the QMS Management Team.

4.1.2.1.3 Quality Assurance Department Representative

- The Quality Assurance Department Representatives report to the Quality Assurance Manager and function independently of the supervision of production/manufacturing.
- They are responsible for the implementation of quality control activities such as inspecting and verifying inspection results relative to specified quality plans.

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- They are also responsible for the inspection filing system.

4.1.2.1.4 Plant Manager

- The Plant Manager reports to the President Operation.
- The Plant Manager is responsible for co-ordinating the activities of Engineering, Purchasing, Manufacturing and Shipping/Receiving in the implementation of the Quality Management System.
- The Plant Manager is also responsible for machine scheduling, operator performance, operator qualification, assembly, testing and packaging of product.
- Plant Manager is authorized to approve all quotation and ensure that all contract requirements are met according to this QMS Manual and associated procedure in the President Operation absence.
- The Plant Manager is authorized to conduct contract reviews in the President Operation absence.
- The Plant Manager also works in conjunction with other departments ensuring overall quality requirements are met.
- Functions as a member of the QMS Management Team.

4.1.2.3.5 Purchasing Agent

- The Purchasing Agent reports to the Plant Manager.
- The Purchasing Agent conducts the activities relating to purchasing, ensuring purchases conform to specifications and costing requirements.
- Functions as a member of the QMS Management Team.

4.1.2.3.6 Section Leaders

- The Section Leaders report to and receive direction from the Plant Manager.
- They are responsible for the execution of assigned production jobs, working in conjunction with the Operators.
- Section Leaders provide guidance, direction and assistance to the Operators and communicate production-related needs and feedback to the Plant Manager.

4.1.2.3.7 Operators

- The Operators report directly to the Section Leaders for task assignment.
- They perform production activities as directed in the development of LJT quality products.

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4.1.2.3.8 Shipper/Receiver

- The Shipper/Receiver reports directly to the Plant Manager and is responsible for handling, storage, packaging, preservation and delivery of product according to specified requirements.

4.1.2.3.9 Engineering Manager

- The Engineering Manager reports directly to the Plant Manager and directs the operations of the Engineering/Process Planning Department.
- The Engineering Manager, in conjunction with other Engineering Department representatives, assists the Plant Manager in the preparation of estimates for production, orientation of quotes or other information for customers.
- When quotations result in the placement of a purchase order, the Engineering/process Planning Department is responsible for developing a process plan for manufacturing the product according to customer-specified, statutory and regulatory requirements.
- Functions as a member of the QMS Management Team.

4.1.2.3.10 Engineers

- The Engineers report directly to the Engineering Manager.
- They develop and prepare operation sketches from customer drawings, perform process and production planning.

4.1.2.3.11 Programmers

- The Programmers report directly to the Engineering Manager.
- They prepare and update the production machine control programs necessary to produce products to the developed process plan, operation sketches and customer requirements.

In addition to the responsibilities and authorities identified above, each applicable documented quality procedure will identify specific responsibility and authority by Organizational Chart position title or department in satisfying work activities affecting quality.

4.1.2.4 Resources

The Organization's senior management is committed to ensuring that adequate training and resources are provided to endorse and enforce the requirements of this manual including the assignment of trained personnel (see 4.18) for management, performance of work and verification activities including internal audits.

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4.1.2.5 Management Representative

The President Operation appoints the Quality Assurance Manager as the Management Representative.

The Management Representative has the following responsibilities and authorities:

- ensuring that processes needed for the QMS are established, implemented and maintained in accordance with the ISO 9001 standards, customer, statutory and regulatory requirements;
- resolving matters pertaining to quality;
- reporting to senior management on the performance of the QMS;
- reporting the need for improvement in the QMS;
- ensuring promotion of the awareness of customer requirements throughout the organization;
- the organizational freedom to resolve matters relating to quality;
- functioning as the liaison with external parties on matters relating to The Organization’s Quality Management System.

Deficiencies identified through the Quality Management System performance review are subject to immediate corrective action.

4.1.2.6 Procedures

The Organization shall have procedures that define the specific tasks and responsibilities. These procedures must be authorized and training provided for their application.

4.1.2.7 Accommodation and Assistance

The Organization shall provide auditors with the accommodation and facilities suitable to allow proper accomplishment of their work and shall provide assistance, data or other information required for this purpose.

Auditors shall have the right to access areas of The Organization where part of their work is to be performed.

Auditors shall be afforded unrestricted opportunity to verify compliance with quality management system documentation and conformance of material and services within contract requirements.

Equipment and personnel needed for verification purposes shall be made available for reasonable use.

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4.1.3 Management Review

The QMS Management Team, and other personnel as necessary, shall review the Quality Management System annually as a minimum to ensure its continuing suitability and effectiveness in satisfying the requirements of the ISO 9001 standards and The Organization's stated policies and objectives.

The areas to be considered during the review are:

- a) Quality Management System's continuing adequacy, suitability and continual improvement of its effectiveness in satisfying ISO 9001;
- b) Quality Management System's continuing suitability and effectiveness in satisfying the Quality Policy and Objectives;
- c) Previous Management Review records;
- d) Customer feedback (satisfaction and complaints);
- e) Control of Non-conforming Product records per 4.13;
- f) Corrective and Preventive Action records per 4.14;
- g) Internal and external Quality Audit results and records per 4.17;
- h) Training Records per 4.18.
- i) Infrastructure;
- j) Review of the adequacy and suitability of the QMS documentation;
- k) Changes to the Quality Management Systems Standards, regulations and statutory requirements and their potential impact on the QMS;
- l) Assessment of opportunities for improvement and the need for changes that could affect the QMS;
- m) Effectiveness of the internal communication process;
- n) Value of the QMS system to the organization;
- o) Process performance;
- p) Adequacy and application of statistical techniques [where applicable];
- q) Supplier performance;
- r) Status of Measuring and Monitoring Equipment;
- s) Follow-up actions from previous management reviews;
- t) Resource needs;
- u) New developments at LJT;
- v) Identify other pertinent issues for management review.

Action items are identified, documented, responsibilities and tentative schedules for completion assigned for matters affecting the Quality Management System. The Corrective and Preventive Action [refer to **Quality Procedure QP4.14**] and/or the Document and Data Control [refer to **Quality Procedure QP4.5**] processes are implemented where applicable.

Records of the Management Reviews shall be maintained (see 4.16).

Performance of the Quality Management System is communicated to the employees.

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4.2 About the QMS

4.2.2 General

The Organization shall establish, document, implement and maintain a Quality Management System as a means of ensuring that the product conforms to specified requirements. The Organization has prepared this Quality Management System Policy Manual, Quality Procedures and associated documentation covering the requirements of ISO 9001.

Exclusions to the requirements of the standards are the following:

ISO 9001:2000 And AS9100 Rev. B Reference	Title	Comment/Reasoning
7.3	Design and Development	The Engineering/Process Planning Department determines the tooling, fixturing, development of operation sketches and CNC program development associated with translating customer sketches, drawings or input into manufacturing data. Typically, the customer reviews, and approves where contracted, the engineering information before production commences. Product design and development is not undertaken.
7.5.1	“Servicing” portion of product and service provision	LJT does not perform work at site. Representatives may visit customer sites to collect information for job estimates. Service work is not undertaken.

Each applicable requirement or set of requirements of the Quality Policy Manual is referenced to an associated Quality Procedure.

The outline structure of the documentation used in the Quality Management System is the Quality Management System Policy Manual as first tier, Quality Procedures Manual as second tier, and associated records as third tier.

All Organization policies and practices are documented and it is mandatory for all personnel to comply with the contents of these documents.

The Quality Assurance Department is an independent body within the framework of The Organization and operates within the specified requirements of the customer, statutory and regulatory agencies.

The Quality Assurance Manager is responsible for the management of the Quality Management System and is authorized by the President Operation to resolve all matters related to quality.

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4.2.2 Quality Management System Procedures

4.2.2.1 The Organization has:

- a) Instituted documented Quality Procedures (QPs) consistent with the requirements of ISO 9001, AS9100 and The Organization's stated Quality Policies.
- b) Effectively implemented the Quality Management System Policy Manual's documented Quality Procedures.
- c) Ensured that the Quality Procedures are readily available to personnel who are responsible for compliance to requirements, and to customer and/or regulatory agency representatives.

4.2.2.2 The Organization's Quality Procedures are cross-referenced with the ISO 9001 requirements as shown below. The title in brackets and the procedure numbers reflect the references employed from previous practice. LJT has elected to retain the numbering system for its procedures.

Reference Clause(s)	ISO 9001 REQUIREMENTS	Procedure No
7.2	Customer-Related Processes (Contract Review)	QP4.3
4.2.3	Control of Documents (Document and Data Control)	QP4.5
7.4	Purchasing	QP4.6
7.5.4	Customer Property (Control of Customer-Supplied Product)	QP4.7
7.5.3	Identification and Traceability	QP4.8
7.5.1 & 7.5.2	Control of Production and Service Provision (Process Control)	QP4.9
8.2.4	Monitoring and Measuring of Product (Inspection and Testing)	QP4.10
7.6	Control of Monitoring and Measuring Devices (Inspection, Measuring and Test equipment)	QP4.11
7.5.3	Identification and Traceability (Inspection and Test Status [portion])	QP4.12
8.3	Control of Nonconforming Product	QP4.13
8.5.2 & 8.5.3	Corrective and Preventive Action	QP4.14
7.5.5	Preservation of Product (Handling, Storage, Packaging, Preservation and Delivery)	QP4.15
4.2.4	Control of (Quality) Records	QP4.16
8.2.2	Internal (Quality) Audit	QP4.17
6.2	Human Resources (Training)	QP4.18
4.2.3 & 4.2.4	Control of Software and Electronic Data	QP4.19
8.1	Measurement Analysis and Improvement – General (Statistical Techniques)	QP4.20
7.2.3	Customer Communication, Focus and Satisfaction	QP4.21
Not Defined	Supplementary Quality Procedures (Refer to 4.2.2.4 of this manual)	SQP

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4.2.2.3 The Organization’s Quality Procedures shall include the following:

- 1.0 Purpose: why and what for.
- 2.0 Scope: area covered and exclusions.
- 3.0 References: reference the policy, forms and documents associated with the Procedure.
- 4.0 Responsibility: organizational unit responsible for the implementation of the document.
- 5.0 Procedure: list the details of what needs to be done. Mention any exceptions or specific area of attention. All “shalls” in the Quality Policy Manual requirements, Shall be satisfied in this section.

Identify each ISO 9001 requirement and answer the following questions:

- 5.1 What shall be done and by whom?
- 5.2 When, where, why, and how it shall be done?
- 5.3 What materials, equipment and documents shall be used?
- 5.4 How shall it be controlled and recorded?

- 6.0 Records: identify what records are generated by the Procedure, where the records are retained and for how long.
- 7.0 Procedure revision record: Procedures shall include a revision record (see 4.5 document and data control).

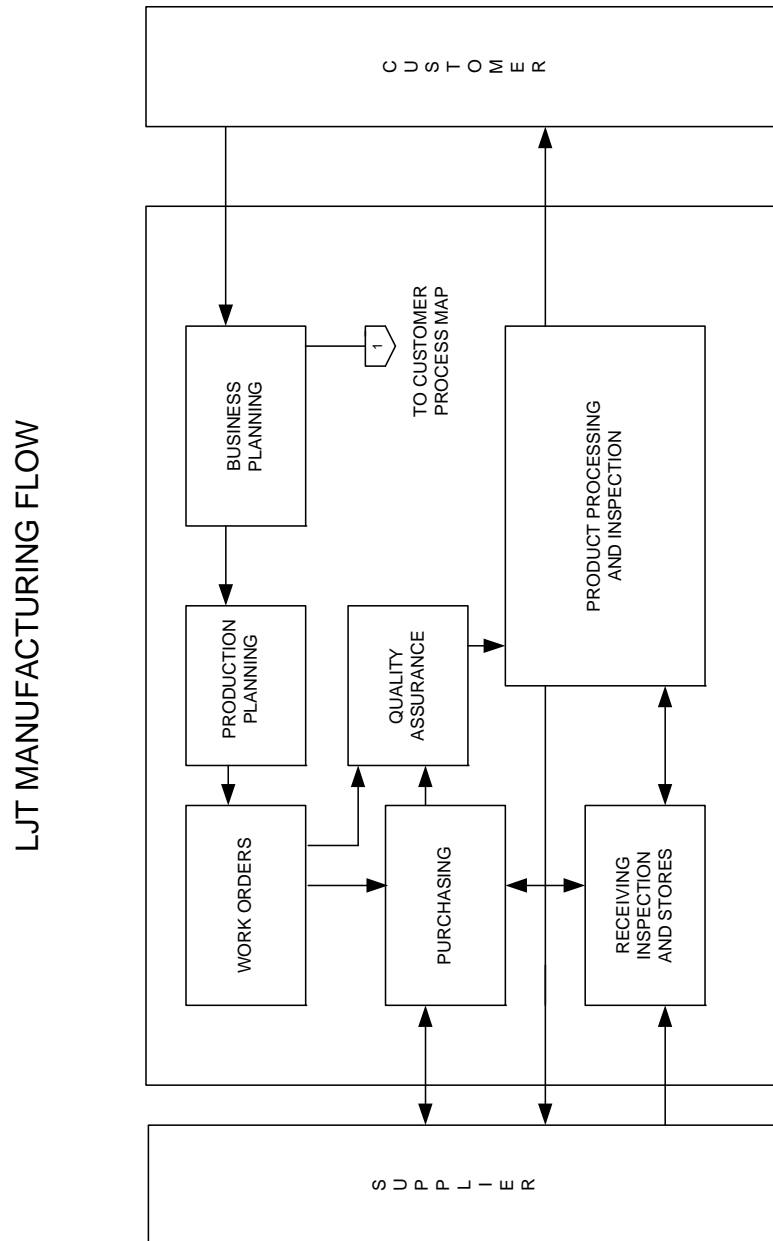
4.2.2.4 Supplementary Quality Procedures

LJT shall establish and maintain documented Supplementary Quality Procedures (SQPs) to satisfy specific requirements which cannot be satisfied by the existing documented Quality Procedures (i.e. special processes, specific customer requirements, etc.).

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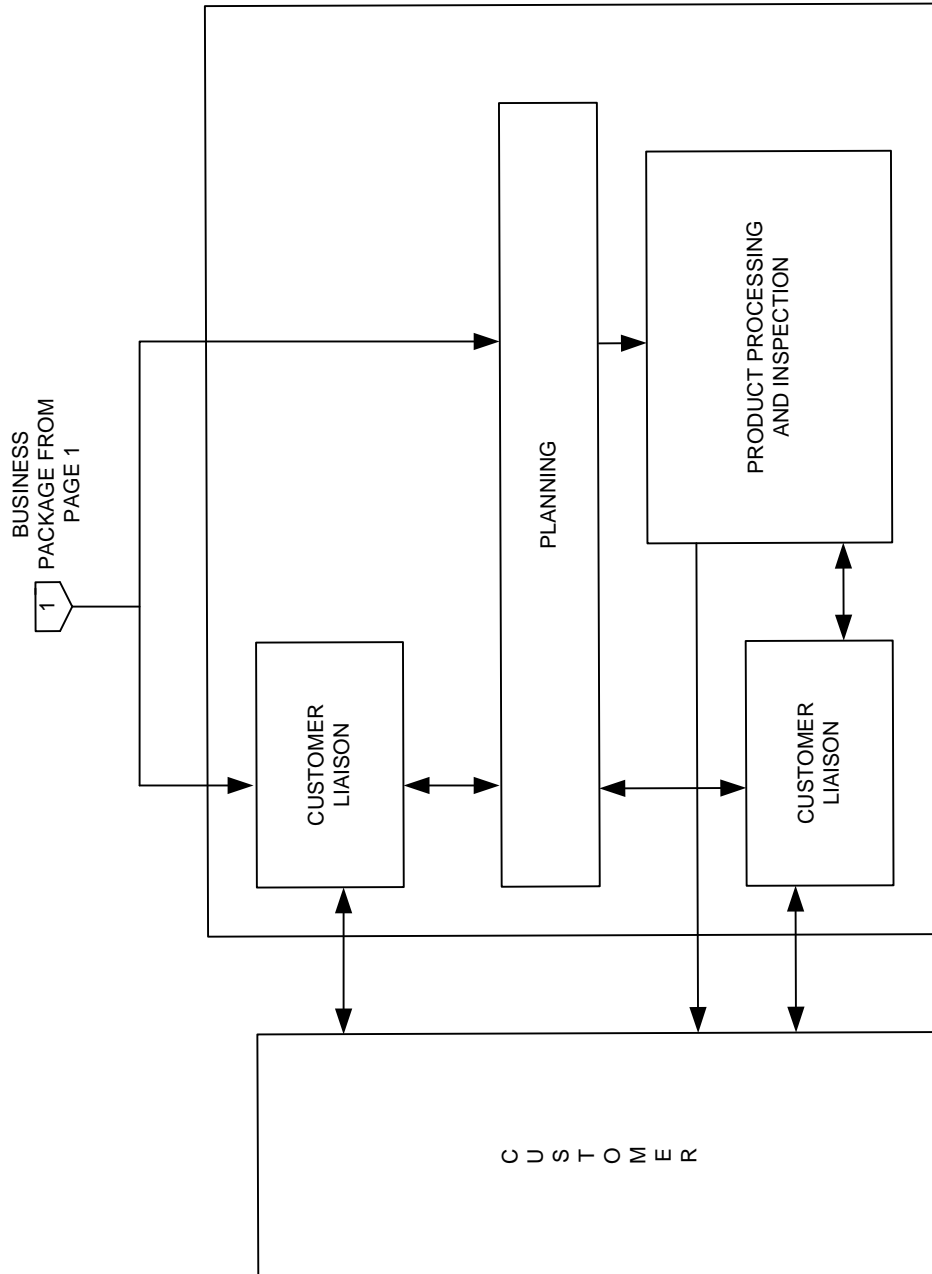
4.2.3 Quality Management System Planning

The interactive processes implemented at LJT are identified in the process flow charts below.



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LJT
CUSTOMER ORDER PROCESSING



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The Organization's senior management shall monitor that planning of the QMS processes is performed.

The QMS planning ensures that:

- a) processes needed for the QMS are identified and their sequence and interaction determined;
- b) process criteria and methods are determined, ensuring operation and control of the processes are effective and quality objectives met;
- c) resource and information requirements are identified and provided to facilitate implementation and maintenance of the QMS, support operation and maintenance of the product, and enhance customer satisfaction by meeting customer requirements;
- d) actions are implemented to achieve planned results and continual improvement of the processes and QMS effectiveness;
- e) processes are monitored, measured where applicable, and data is collected for analysis. Results are reported to senior management for assessment;
- f) action is taken, as appropriate, to facilitate corrective or preventive action, or to incorporate opportunities for improvement;
- g) proposed changes to QMS processes are evaluated prior to implementation, ensuring that the QMS integrity is maintained ;
- h) the infrastructure needed to achieve conformity to product requirements is determined, provided and maintained. The infrastructure planning includes consideration of the process equipment, workspace, utilities and support services;
- i) provision and maintenance of the work environment is factored into the planning activities and ensures conformity to product requirements.

4.2.4 Internal Communication

Part of the QMS planning activities is to ensure that communication processes are established within the organization.

The methods employed facilitate identification of responsibilities and authorities, transference of instructional information, feedback to senior management; communication regarding the effectiveness of the quality management system; communication of the importance of meeting customer, statutory and regulatory requirements.

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Communication techniques may include one or more of the following:

- a) posted information;
- b) verbal information;
- c) email;
- d) meetings;
- e) use of job descriptions;
- f) reports;
- g) organizational charts.

4.2.5 **Legal and Other Requirements**

Legal, customer, regulatory, industrial, quality, best practices, guidelines or other requirements may be applicable to the organization's product or impact its processes.

The Organization monitors all quality management system requirements imposed by the applicable regulatory authorities. In the event the requirements change, their impact on the products and processes is assessed and appropriate action taken.

A listing of legislation, regulations, guidelines, codes of practice, etc. or access to the information sources is maintained by The Organization.

Communication of the relevant information relating to the legal and other requirements is cascaded down from senior management to applicable management and employees.

4.2.6 **Product Configuration Management**

The Organization has established, documented and maintains a process for the configuration management of its products.

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	Clause 7.2.2 – Review of Requirements Related to the Product		Approved By: Ted Denham

4.3 **Contract Review**

4.3.1 **General**

The Organization shall establish and maintain a documented procedure for Contract Review and for the co-ordination of these activities. Refer to **Quality Procedure QP4.3**

4.3.2 **Review**

Before submission of a tender, or the acceptance of a contract, the contract or tender shall be reviewed by The Organization to ensure that:

- a) The requirements (statutory, regulatory, legal, customer, product-related, delivery, post-delivery, LJT's internal practices, those requirements not stated by the customer but necessary for the specified or intended use) are adequately defined and documented. Where no written statement of requirement is available, The Organization shall ensure that the contract requirements are agreed upon with the customer before accepting the contract.
- b) Risks (e.g. new technology, short delivery time scale, etc.) have been evaluated.
- c) Any discrepancies between the contract requirements and those in the tender are resolved.
- d) The Organization has the capability to meet the contract requirements.

4.3.3 **Amendment to a Contract**

The Organization shall identify how an amendment is made to a contract and correctly transferred to the functions concerned within The Organization

4.3.4 **Records**

Records of Contract Reviews shall be maintained (see 4.16).

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4.5 Document and Data Control

4.5.1 General

The Organization shall establish and maintain a documented Procedure to control all Documents and Data that relate to the requirements of ISO 9001 and AS 9100. The documents and data can be in the form of hard copy or electronic media.

The controls apply to documents and data generated by customers, suppliers, and those documents of external origin utilized by LJT for reference purposes.

Controlled documents are periodically reviewed for correctness, currency of information, legibility and to ensure they are readily identifiable. The documents are updated and re-approved as required.

Refer to **Quality Procedure QP4.5** for details of the process controls.

4.5.2 Document and Data Approval and Issue

The documents and data shall be legible, readily identifiable, reviewed and approved for adequacy by authorized personnel prior to issue. The latest release of organization generated documents and customer-supplied documents are maintained and made readily available on The Organization's server or in hardcopy format. Previous document versions are archived in electronic format or physical hardcopies are stored in the Quality Assurance Department Filing System.

This control shall ensure that:

- a) The pertinent issues of appropriate documents are available at all locations where operations essential to the effective functioning of the quality management system are performed.
- b) Personnel have access to QMS documentation and are aware of the relevant procedures.
- c) Invalid and/or obsolete documents are promptly removed from all points of issue or use, or otherwise assured against unintended use.
- d) Any obsolete documents retained for legal and/or knowledge preservation purposes are suitably identified.
- e) The revision status of the documents is identified.

The Organization shall provide customers and/or regulatory authorities access to QMS documentation for reference purposes.

4.5.3 Document and Data Changes

Changes to documents and data shall be reviewed and approved by the same function that performed the original review and approval, unless specifically designated otherwise. The designated functions shall have access to pertinent background information upon which to base their review and approval. Where practicable, the nature of the change shall be identified in the document or the appropriate attachments.

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4.5.3.1 Document Change Incorporation

The Organization shall establish a process to ensure changes to documents are distributed and implemented in an effective manner.

Document changes shall be co-ordinated with requirements defined by the customers and/or regulatory authorities.

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	Clause 7.4.2 Purchasing Information		Approved By: Ted Denham

4.6 Purchasing

4.6.1 General

The Organization shall establish and maintain a documented procedure to ensure purchased product conforms to specified requirements. Refer to **Quality Procedure QP4.6**

Note: this requirement also applies to product obtained from customer-designated sources.

4.6.2 Evaluation of Suppliers

LJT shall:

- a) Evaluate, select and periodically re-evaluate suppliers on the basis of their ability to meet subcontract requirements including the quality management system and any specific quality assurance requirements.
- b) Establish and maintain quality records of acceptable suppliers, including the scope of the approval and results of the periodic reviews. (see 4.16 Control of Quality Records).

Note: definition of the extent of control should include a system for disapproval, if necessary.

- c) Define the necessary actions to take when dealing with suppliers that do not meet requirements.
- d) Ensure that where required, The Organization and all suppliers use customer-approved special process sources.
- e) Ensure the function having responsibility for approving supplier quality management systems has the authority to disapprove the use of sources.
- f) Be responsible for the quality of all products purchased from suppliers, including customer-designated sources.

4.6.3 Purchasing Data

Purchasing documents shall contain data clearly describing the product ordered, including where applicable:

- a) The type, class, grade or other precise identification.
- b) The title or other positive identification, and applicable issues of specifications, drawings or process requirements, inspection instructions and other relevant technical data, including requirements for approval or qualification of product, procedures, process equipment and personnel.

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- c) The title, number and issue of the quality management system standard to be applied.
- d) Purchasing documents shall be reviewed and approved for adequacy of the specified requirements prior to release.

4.6.4 Verification of Purchased Product

4.6.4.1 Verification at Supplier's Premises

Where The Organization proposes to verify purchased product at the supplier's premises, The Organization shall specify verification arrangements and the method of product release in the purchasing documents.

4.6.4.2 Customer Verification of Subcontracted Product

Where specified in the contract, The Organization's customer or the customer's representative shall be afforded the right to verify at the supplier's premises and The Organization's premises that subcontracted product conforms to specified requirements.

- Such verification shall not be used by The Organization as evidence of effective control of quality by the supplier.
- Verification by the customer shall not absolve The Organization of the responsibility to provide acceptable product, nor shall it preclude subsequent rejection by the customer.

4.6.4.3 Right of Entry

The Organization shall include provisions in subcontracts to allow The Organization, customer, and regulatory agencies right of entry to any place necessary to determine and verify the quality of contracted work, records and material.

4.6.4.5 Delegation of The Organization's Verification to Subcontractor

Where The Organization proposes to delegate product verification to a sub-contractor, The Organization shall define the requirements for the delegation and maintain a list of delegations.

4.6.5 Requirements Flowdown

The Organization shall flow down quality management system requirements to suppliers to the extent necessary to ensure that characteristics not verifiable upon receipt are adequately controlled by the supplier.

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	ISO 9001:2000 Rev. A: Clause 7.5.4 – Customer Property	Revision No. 1	Revised By: Larry Denham
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4.7 Control of Customer-Supplied Product

- a) The Organization shall establish and maintain a documented procedure for the control of identification, verification, storage, maintenance and safeguarding of customer supplied product or tooling provided for processing of, or incorporation into, The Organization's product. Any such product/tooling that is lost, damaged or is otherwise unsuitable for use shall be recorded and reported to the customer in writing (see 4.16 Control of Quality Records). Refer to **Quality Procedure QP4.7**

- b) Verification by The Organization does not absolve the customer of the responsibility to provide acceptable product.

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4.8 Product Identification and Traceability

- a) Where appropriate, The Organization shall establish and maintain a documented procedure for identifying the product by suitable means from receipt and during all stages of production and delivery. Refer to **Quality Procedure QP4.8**
- b) The established quality procedure shall take into consideration any unique identification that is a contract requirement.
- c) This identification shall be recorded (See 4.16).
- d) The Organization shall maintain the identification of the product configuration in order to identify any differences between the actual configuration and the agreed configuration.
- e) When acceptance authority media are used (e.g. stamps, electronic signatures, passwords), The Organization shall establish and document controls for the media.
- f) According to the level of traceability required by contract, regulatory, or other established requirements, The Organization's system shall provide for the following:
 - identification to be maintained through the product life;
 - all the products manufactured from the same batch of raw materials or from the same manufacturing batch to be traced, as well as the destination (delivery, scrap) of all products of the same batch;
 - for an assembly, the identity of its components and those of the next higher assembly to be traced;
 - for a given product, a sequential record of its production (manufacture, assembly, inspection) to be retrieved.

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			Approved By: Ted Denham

4.9 Process Control

4.9.1 General

The Organization shall identify, plan and develop the processes needed for product realization.

The objective of the planning is to ensure that quality/customer/statutory/regulatory requirements and process parameters are defined, documented where appropriate, and implemented to satisfy the QMS, quality objectives and product requirements and characteristics.

During the planning activities, The Organization determines the following, as appropriate:

- a) quality objectives for the product;
- b) the need to establish processes and documents specific to the product;
- c) required verification, validation, monitoring, inspection and test activities specific to the product, including acceptance criteria;
- d) records needed to provide evidence that the realization processes and resulting product meet requirements;
- e) the identification of resources to support operation and maintenance of the product;
- f) establishment of process controls and development of control plans where key characteristics have been identified;
- g) identification of in-process verification points when adequate verification of conformance cannot be performed at a later stage of product realization;
- h) the design, manufacture and use of tooling so that variable measurements can be taken, particularly for key characteristics;
- i) special processes.

The output of the planning shall be in a format suitable for LJT operations.

Refer to Quality Procedure QP4.9 for a description of planning specifics, determination and establishment of controls for the processes, development of Process Plans (also referred to as Quality Plans or Control Plans) for the product realization processes.

4.9.2 Process Specification Requirements

When special processes requiring customer approval are required by drawing, specification, or purchase order, The Organization shall obtain qualification prior to processing or subcontract the process to a customer-approved source.

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	Clause 7.5.2 – Validation of Processes for Production and Service Provision		Approved By: Ted Denham

4.9.3 Control of Production Process Changes

Persons authorized to approve changes to production shall be identified.

The Organization shall identify and obtain acceptance of changes that require customer and/or regulatory authority approval in accordance with contract or regulatory requirements.

Changes affecting processes, production equipment, tools and programs shall be documented. Procedures shall be available to control their implementation.

The results of changes to production processes shall be assessed to confirm that the desired effect has been achieved without adverse effects to product quality.

4.9.4 Control of Production Equipment, Tools and NC Machine Programs

The Organization shall maintain and control production equipment, tools and Numerical Control (NC) machine programs to ensure that the product meets specified requirements.

The equipment, tools and programs shall be validated prior to use and maintained and inspected periodically according to documented procedures.

Validation prior to production use shall include verification of the first article produced to the design data/specification.

4.9.5 Control of Work Transferred

The Organization shall define the process to control and validate the quality of work transferred, on a temporary basis, outside The Organization’s facility.

4.9.6 Validation of Processes for Production and Service Provision

Where the results of processes cannot be fully verified by subsequent inspection and testing of the product, and where processing deficiencies may become apparent only after the product is in use, the processes (commonly referred to as “special processes”) shall be qualified and approved prior to use.

Control of the significant operations and parameters of such processes shall be maintained in accordance with documented process specifications.

Proposed changes to the processes are subjected to the review and control cycle prior to implementation.

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	Clause 8.2.4 –Monitoring and Measurement of Product		Approved By: Ted Denham

4.10 Inspection and Testing

4.10.1 General

The Organization shall document requirements for product or service acceptance. The documentation may be part of the production documentation, but shall include:

- a) criteria for acceptance and/or rejection;
- b) where in the sequence measurement and testing operations are performed;
- c) a record of the measurement results;
- d) type of measurement instruments required and any specific instructions associated with their use.

Refer to **Quality Procedure QP4.10**

When key characteristics have been identified, they should be monitored and controlled.

When The Organization uses sampling inspection as a means of product acceptance, the plan shall be statistically valid and appropriate for use. The plan shall preclude the acceptance of lots whose samples have known nonconformities. When required, the plan shall be submitted for customer approval.

The documented requirements shall ensure that product shall not be used until it has been inspected or otherwise verified as conforming to specified arrangements.

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

4.10.1.1 **Subcontracting Inspection Activities**

When The Organization proposes to subcontract inspection activities, The Organization shall control the subcontracted activity consistent with the requirements of section 4.6.

4.10.2 Receiving Inspection and Testing

4.10.2.1 The Organization shall ensure that incoming product is inspected or otherwise verified as conforming to specified purchase requirements. Verification of conformance to the specified requirements shall be in accordance with the documented procedure (QP4.10).

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4.10.2.2 In determining the amount and nature of receiving inspection, consideration shall be given to the amount of control exercised at the supplier’s premises and the recorded evidence of conformance provided.

4.10.2.3 LJT does not require a positive-recall process.

4.10.2.4 When certification test reports are used as means of product acceptance, procedures shall document the types and frequencies of analyses to validate certification.

4.10.3 In-Process Inspection and Testing

The Organization shall:

- a) Inspect and test the product as required by the documented procedure (QP4.10)
- b) Hold product until the required inspection and tests have been completed or necessary reports have been received and verified.

4.10.4 Final Inspection and Testing

The Organization shall carry out all final inspection and testing in accordance with the documented procedure (QP4.10) to complete the evidence of conformance of the finished product to the specified requirements.

The documented procedure (QP4.10) shall require that all specified inspection and tests, including those specified either on receipt of product or in process, have been carried out and that the results meet specified requirements.

No product shall be dispatched until all the activities specified in the documented procedure (QP4.10) have been satisfactorily completed and the associated data and documentation are available and authorized.

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4.10.5 Inspection and Test Records

4.10.5.1 General

The Organization shall establish and maintain records, which provide evidence that the product has been inspected and/or tested. These records shall show clearly whether the product has passed or failed the inspections and/or tests according to defined acceptance criteria or requirements.

Test records shall show actual test results data when required by specification or acceptance test/quality/control plan.

Where the product fails to pass any inspection and/or test, the procedure for the control of non-conforming product shall apply (see 4.13). Records shall identify the inspection authority responsible for the release of product (see 4.16).

4.10.5.2 First Production Article (first article inspection report F.A.I.R.)

The Quality Management System shall provide a process, as appropriate, for the inspection, verification, and documentation of a representative item from the first production run of a new part, or following any subsequent change that invalidates the previous first article inspection results.

4.10.6 Monitoring and Measurement of Processes

4.10.6.1 General

QMS processes shall be monitored, and measured where applicable. The degree of monitoring and measurement, methods to be employed, and responsibilities shall be determined during the QMS planning and process planning phases. Results are reported to top management.

The methods employed shall demonstrate the ability of the processes to achieve planned results.

In the event of process nonconformity, The Organization shall:

- a) take appropriate action to correct the nonconforming process;
- b) evaluate whether the process nonconformity has resulted in product nonconformity;
- c) identify and control the nonconforming product in accordance with the Control of Nonconforming Product Process. Refer to **Quality Procedure QP4.13**.

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4.11 Control of Inspection, Measuring and Test Equipment

General

The Organization shall establish and maintain a documented procedure to control, calibrate, and maintain inspection, measuring and test equipment used by The Organization to demonstrate the conformance of product to specified requirements. Inspection, measuring and test equipment shall be used in a manner which ensures that the measurement uncertainty is known and is consistent with the required measurement capability. Refer to **Quality Procedure QP4.11**

Where adjustable devices or comparative references are used as suitable methods for inspection, they shall be checked to prove that they are capable of verifying the acceptability of product, prior to release for use during production, and shall be rechecked at prescribed intervals. The Organization shall establish the extent and frequency of such checks and shall maintain records as evidence of control (see 4.16).

Where the availability of technical data pertaining to the inspection, measuring and test equipment is a specified requirement, such data shall be made available, when required by the customer or customer's representative, for verification that the inspection, measuring and test equipment is functionally adequate.

Inspection, Measuring and Test Equipment includes all types of devices used by any supplier or personnel to verify materials, products, processes, or other Inspection, Measuring and Test Equipment. This includes tooling used as media for inspection, test hardware, test software and automated test equipment. Also included is personally owned equipment used for product or process acceptance.

4.11.1 Control Procedure

The Organization shall:

- a) Determine the measurements to be made and the accuracy required, and select the appropriate inspection, measuring and test equipment that is capable of the necessary accuracy and precision.
- b) Identify all Inspection, Measuring and Test Equipment that can affect product quality. Maintain a register of the devices and calibrate and adjust them at prescribed intervals, or prior to use, against certified equipment having a known valid relationship to internationally or nationally recognized standards. Where no such standard exists, the basis used for calibration shall be documented.
- c) Define the process employed for the calibration of Inspection, Measuring and Test Equipment, including details of equipment type, unique identification, location, frequency of checks, check method, acceptance criteria and the action to be taken when results are unsatisfactory. The process shall identify the method employed for recalling the inspection equipment.

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- d) Identify Inspection, Measuring and Test Equipment with a suitable indicator or approved identification record to show the calibration status.
- e) Maintain all calibration records for Inspection Measuring and Test Equipment (see 4.16).
- f) Assess and document the validity of previous inspection and test results when Inspection, Measuring and Test Equipment is found to be out of calibration.
- g) Ensure that the environmental conditions are suitable for the calibrations, inspections, measurements and tests being carried out.
- h) Ensure that the handling, preservation and storage of Inspection Measuring and Test Equipment are such that the accuracy and fitness for use are maintained.
- i) When required, safeguard from adjustment inspection, measuring and test facilities, including both test hardware and test software, to prevent invalidation of the calibration setting.

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4.12 **Inspection and Test Status**

4.12.1 **General**

The Inspection and Test Status of product shall be identified by suitable means, which indicate the conformance or nonconformance of product with regard to inspection and test performed. The identification of Inspection and Test Status shall be maintained, as defined in the quality plan and/or quality procedures, throughout production of the product to ensure that only product that has passed the required inspections and tests [or released under an authorized concession (see 4.13.2)] is dispatched.

4.12.2 **Acceptance Authority Media**

When acceptance authority media are used (e.g., stamps, electronic) The Organization's Quality Management System shall establish and document controls for the media.

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4.13 Control of Nonconforming Product

4.13.1 General

The Organization shall establish and maintain documented procedures to ensure that product that does not conform to specified requirements is prevented from unintended use. This control shall provide for identification, documentation, evaluation, segregation (when practical), disposition of non-conforming product, and for notification to the functions concerned. Parties requiring notification of non-conforming product may include internal departments and/or functions and customers. The term “non-conforming product” includes non-conforming product returned from a customer. Refer to **Quality Procedure QP4.13**

4.13.2 Review and Disposition of Non-conforming Product

4.13.2.1 General

The responsibility of review and authority for the disposition of non-conforming product shall be defined.

Non-conforming product shall be reviewed in accordance with documented procedures. It may be

- a) Reworked to meet the specified requirements.
- b) Accepted with or without repair by concession.
- c) Scrapped.
- d) Returned to supplier or customer.

Where required by contract, the proposed use or repair of product (see 4.13.2 b) which does not conform to specified requirements shall be reported for concession to the customer or customer’s representative. The description of the nonconformity that has been accepted, and of repairs, shall be recorded to denote the actual condition (see 4.16).

Repairs and/or reworked product shall be re-inspected in accordance with the quality plan and/or documented procedures.

Regrading is not applicable.

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4.13.2.2 Material Review Authority

Notwithstanding the requirements of 4.13.2.1, The Organization shall not use dispositions of use-as-is or repair, unless specifically authorized by the customer, if:

- a) The product is produced to customer design.
- b) The nonconformity results in a departure from the contract requirements.

4.13.2.3 Scrap Material

Product dispositioned for scrap shall be conspicuously and permanently marked until physically rendered unsuitable for use in completed products.

4.13.2.4 Notification

The Quality Management System shall provide for timely reporting of non-conformances that may affect product already delivered or before use has started.

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	Clause 8.5.3 – Preventive action		Approved By: Ted Denham

4.14 Corrective and Preventive Action

4.14.1 General

The Organization shall establish and maintain documented procedures for implementing corrective and preventive action. The Organization shall implement and record any changes to the documented procedures resulting from corrective and preventive action.

4.14.2 Corrective Action

The procedures for corrective action shall include:

- a) The effective handling of product non-conformances.
- b) Investigating of the cause of non-conformities relating to the product, process and quality management system, and recording the results of the investigation (see 4.16).
- c) Determination of the corrective action needed to eliminate the cause of non-conformities.
- d) Application of controls to ensure that corrective action is taken and it is effective.

4.14.3 Preventive Action

The procedures for preventive action shall include:

- a) The use of appropriate sources of information such as processes and work operations which affect product quality, concessions, audit results, quality records and customer complaints to detect, analyze and eliminate potential causes of nonconformities.
- b) Determination of the steps needed to deal with any problems requiring preventive action.
- c) Initiation of preventive action and application of controls to ensure that the action is effective.
- d) Ensuring that relevant information on actions taken is submitted for management review (see 4.1.3).

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4.15 Handling, Storage, Packaging, Preservation and Delivery

4.15.1 General

The Organization shall establish and maintain documented procedures for handling, storage, packaging, preservation and delivery of product or its constituent parts. Refer to **Quality Procedure QP4.15**

4.15.2 Handling

The Organization shall provide methods of handling product that prevent damage and deterioration.

4.15.3 Storage

The Organization shall use designated storage areas or stock rooms to prevent damage or deterioration of product, pending use or delivery. Appropriate methods for authorizing receipt to and dispatch from such areas shall be stipulated.

In order to detect deterioration, the condition of product in stock shall be assessed at appropriate intervals.

4.15.4 Packaging

The Organization shall control packaging and marking processes (including materials used) to the extent necessary to ensure conformance to specified requirements.

4.15.5 Preservation

The Organization shall apply appropriate methods for preservation and segregation of product or its constituent parts when the product is under The Organization's control.

Preservation shall include, where applicable in accordance with product specifications and/or applicable regulations, provisions for:

- a) cleaning;
- b) prevention, detection and removal of foreign objects;
- c) special handling for sensitive products;
- d) marking and labeling including safety warnings;
- e) shelf life control and stock rotation;
- f) special handling for hazardous materials.

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4.15.6 Delivery

The Organization shall arrange suitable transportation specified by the Traveler/Process Plan according to customer requirements.

The Organization shall ensure that documents required by the contract/order to accompany the product are present at delivery and are protected against loss and deterioration.

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	ISO 9001:2000 Rev. A: Clause 4.2.1 – Documentation Requirements – General	Revision No. 1	Revised By: Larry Denham
	Clause 4.2.4 – Control of Records		Approved By: Ted Denham

4.16 Control of Quality Records

The Organization shall establish and maintain documented procedures for identification, collection, filing, storage, maintenance and disposition of quality records. Records may be in the form of hard copy or electronic media. Refer to **Quality Procedure QP4.16**

Quality records shall be maintained to demonstrate conformance to specified requirements and the effective operation of the quality management system. Pertinent quality records from suppliers shall be an element of these data.

All quality records shall be legible, readily identifiable, and shall be stored and retained in such a way that they are readily retrievable in facilities that provide a suitable environment to prevent damage or deterioration and to prevent loss.

Retention times of quality records shall be established in accordance with customer, statutory and regulatory requirements.

Quality records shall be made available for review by the customer, customer's representative or regulatory authorities in accordance with contract or regulatory requirements.

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4.17 **Internal Quality Audits**

The Organization shall establish and maintain documented procedures for planning and implementing internal quality audits to verify whether the QMS:

- a) conforms to planned arrangements, the requirements of the ISO 9001:2000 and SAE AS9100 standards and the QMS requirements established by The Organization;
- b) is effectively implemented and maintained.

Refer to **Quality Procedure QP4.17**

Internal Quality Audits shall be planned, scheduled and conducted on the basis of the status and importance of the activity to be audited and the results of previous audits.

The internal audits shall be carried out by personnel independent of those having direct responsibility for the activity being audited. The selection of auditors shall ensure objectivity and impartiality of the audit process.

Detailed tools and techniques shall be defined and developed such as check-sheets, process flowcharts, or any similar method to support the audit of the QMS requirements. The acceptability of the selected tools will be measured against the effectiveness of the internal audit process and the overall organization performance.

The internal audits shall also meet contract and/or regulatory requirements.

The results of the audits shall be recorded (see 4.16) and brought to the attention of the personnel having responsibility in the area audited. The management personnel responsible for the area shall take timely corrective action on deficiencies found during the audit.

Follow-up audits activities shall verify and record the implementation and effectiveness of the corrective action taken (see 4.16).

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4.18 **Training**

The Organization shall establish and maintain documented procedures for identifying training needs and provide for the training or other action of all personnel performing activities affecting quality. Personnel performing specific assigned tasks shall be qualified on the basis of appropriate education, competence, skills, training and/or experience, as required. Appropriate records of training shall be maintained (see 4.16). The effectiveness of actions taken is assessed. Refer to **Quality Procedure QP4.18**

4.19 **Control of Software and Electronic Data**

The Organization shall establish and maintain documented procedures for maintenance of applicable software used by, and electronic data collected by, LJT.
Refer to **Quality Procedure QP4.1**

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4.20 **Statistical Techniques**

4.20.1 **Identification of Need**

The Organization shall identify the need for statistical techniques required for establishing, controlling and verifying process capability and product characteristics.

4.20.2 **Procedures**

The Organization shall establish and maintain documented procedures to implement and control the application of the statistical techniques identified in 4.20.1. Refer to **Quality Procedure OP4.20**

4.20.3 **Sampling Inspection**

When The Organization uses sampling inspection as a means of product acceptance, the plan shall be valid and appropriate for use.

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4.21 Customer Communication, Focus and Satisfaction

The Organization determines and establishes the means and practices for communication with customers.

The communications facilitate responding to customer enquiries for product information, customer feedback, requests for quotation, contract matters (stated and unstated requirements, order amendments, etc.).

Customer communication results in the appropriate activities (e.g. contract review, customer surveys, control of nonconforming product, document control, corrective or preventive action, continual improvement action) being undertaken.

The communications are focussed at determining perceived customer satisfaction and enhancing it.

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	Clause 8.4 – Analysis of Data		Approved By: Ted Denham

4.22 Analysis of Data and Continual Improvement

The Organization determines, collects and analyzes data to demonstrate the suitability and effectiveness of the Quality Management System and evaluate where continual improvement of the QMS effectiveness can be made.

Data is collected relating to the following:

- a) customer satisfaction;
- b) product conformity to requirements;
- c) process characteristics and trends;
- d) supplier performance.

In addition, any opportunities for improvement identified by employees, customers, auditors, statutory or regulatory authorities are identified, assessed and appropriate action taken as part of the analysis.

Continual improvement of the QMS is determined through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management reviews.