Badger Precision Spring, Inc.

Quality Manual

OCT 2003

0.0 Quality Policy

Badger Precision Spring, Inc.
Quality Policy

The policy of Badger Precision Spring, Inc. is a total commitment to an effective and economical quality management system, wherein, the proper control is established, in conjunction with our customer quality requirements, to effectuate a continuous improvement process, which will produce a quality product that will meet or exceed our customer requirements.

President

0.1 Table of contents

Section Title Page

1.0 Scope

This Quality Manual is to describe and direct the Quality Management System in use at Badger Precision Spring, that it establishes to achieve and maintain a level of quality that meets customer and statutory requirements while enhancing customer satisfaction through continuous improvement. This Quality Manual applies to the Badger Precision Spring location in Genoa City, Wisconsin and is subject to amendments as results of changes to working practices and reviewed periodically.

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2.0 References

Reference material used for this Quality Manual:

ANSI/ISO/ASQ Q9001-2000 – Quality Management Systems – Requirements.

3.0 Terms and definitions

For the purpose of this manual the following definitions apply.

BPS Badger Precision Spring, Inc.
QMS Quality Management System

4.0 Quality management system

4.1 General requirements

BPS has established, documented, implemented and maintains a QMS in accordance with requirements of all applicable standards. BPS continually improves its effectiveness of the QMS.

BPS will:

a) Identify the processes needed for the QMS and their application throughout the organization.
b) Determine the sequence and interaction of these processes.(Figure1)
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 the operation and monitoring of these processes.
e) Monitor, measure and analyze these processes.
f) Implement actions necessary to achieve planned results and continual improvements of these processes.

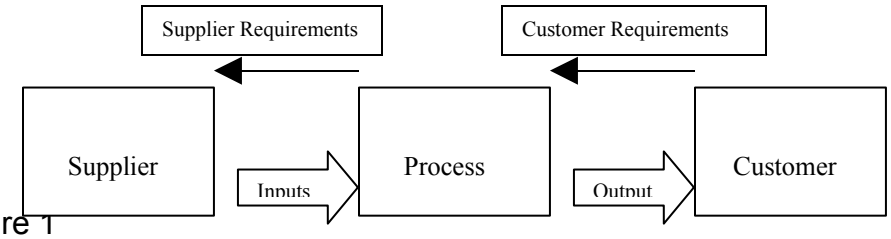

Figure 1

These processes will be managed by BPS in accordance with the requirements of applicable standards and regulations.

Where BPS chooses to outsource any process that effects product conformity with requirements, BPS will ensure control over such processes.

4.2 Documentation requirements

4.2.1 General

BPS, QMS documentation includes:

a) Documented statements of the Quality Policy and quality objectives of BPS.
b) This Quality Manual.
c) Documented procedures maintained in the Procedures Manual.
d) Documents needed by BPS to ensure the effective planning, operation and control of its processes.
e) Records required by applicable standards maintained by Record Control Procedure.

4.2.2 Quality manual

BPS has established and maintains a quality manual that includes:

a) The scope of the QMS.
b) Reference to the procedures established by the QMS.
c) A description of the interaction between the processes of the QMS.

4.2.3 Control of documents

Documents required by the QMS will be controlled by the Document Control Procedure. Records are a special document and will be controlled by the Record Control Procedure.

The Document Control Procedure is established to define the controls needed:

a) To approve documents for adequacy prior to issue.
b) To review and update as necessary and re-approve documents
c) To ensure that changes and the current revision status of documents are identified.
d) To ensure that relevant versions of applicable documents are available at points of use.
e) To ensure that documents remain legible and readily identifiable.
f) To ensure that documents of external origin are identified and their distribution controlled.
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

Records are established and maintained to provide evidence of conformity and of the effective operation of the QMS. Records will remain legible, readily identifiable and retrievable. The Record Control Procedure is established to define the controls needed for the identification, storage, protection, retrieval, retention time and disposition of records.

5.0 Management responsibility

5.1 Management commitment

Top management has provided evidence of its commitment to the development and implementation of the QMS and continually improving its effectiveness by

a) Communicating to BPS the importance of meeting customer as well as statutory and regulatory requirements.
b) Establishing the quality policy.
c) Ensuring that quality objectives are established.
d) Conducting management reviews.
e) Ensuring the availability of resources.

5.2 Customer focus

Top management has ensured that customer requirements are determined and are met with the aim of enhancing customer satisfaction.

5.3 Quality policy

Top management has ensured that the quality policy

a) Is appropriate to the purpose of BPS.
b) Includes a commitment to comply with the requirements and continually improve the effectiveness of the QMS.

c) Provides a framework for establishing and reviewing quality objectives.
d) Is communicated and understood within BPS.
e) Is reviewed for continuing suitability.

5.4 Planning

5.4.1 Quality objectives

Top management has ensured that quality objectives, including those needed to meet requirements for product, are established at relevant functions and levels within BPS. The quality objectives will be measurable and consistent with the quality policy.

5.4.2 Quality management system planning

Top management has ensured that

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

5.5 Responsibility, authority and communication

5.5.1 Responsibility and authority

Top management has ensured that responsibilities and authorities are defined and communicated within BPS.

5.5.2 Management representative

Top management has appointed a member of management who, irrespective of other responsibilities, has the responsibility and authority that includes

a) Ensuring that processes needed for the QMS are established, implemented and maintained.
b) Reporting to top management on the performance of the QMS and any need for improvement.
c) Ensuring the promotion of awareness of customer requirements throughout BPS.

5.5.3 Internal communication

Top management has ensured that appropriate communication processes are established within BPS and that communication takes place regarding the effectiveness of the QMS.

5.6 Management review

5.6.1 General

Top management will review BPS QMS, at planned intervals, to ensure its continuing suitability, adequacy and effectiveness. This review will include assessing opportunities for improvement and the need for changes to the QMS, including the quality policy and quality objectives.

Records from management reviews will be maintained.

5.6.2 Review input

The input to management review will include information on

a) Results of audits.
b) Customer feedback.
c) Process performance and product conformity.
d) Status of preventive and corrective actions.
e) Follow-up actions from previous management reviews.
f) Changes that could affect the QMS.

g) Recommendations for improvement.

5.6.3 Review output

The output from the management review will include any decisions and actions related to

a) Improvement of the effectiveness of the QMS and its processes.
b) Improvement of product related to customer requirements.
c) Resource needs.

6.0 Resource management

6.1 Provision of resources

BPS will determine and provide the resources needed

a) To implement and maintain the QMS and continually improve its effectiveness.
b) To enhance customer satisfaction by meeting customer requirements.

6.2 Human resources

6.2.1 General

Personnel performing work affecting product quality will be competent on the basis of appropriate education, training, skills and experience.

6.2.2 Competence, awareness and training

BPS will

a) Determine the necessary competence for personnel performing work affecting product quality.

b) Provide training or take other actions to satisfy these needs.
c) Evaluate the effectiveness of the actions taken.
d) Ensure that its personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives.
e) Maintain appropriate records of education, training, skills and experience.

6.3 Infrastructure

BPS will determine, provide and maintain the infrastructure needed to achieve conformity to product requirements. Infrastructure includes, as applicable

a) Buildings, workspace and associated utilities.
b) Process equipment (both hardware and software).
c) Supporting services (such as transport or communication).

6.4 Work environment

BPS will determine and manage the work environment needed to achieve conformity to product requirements.

7.0 Product realization

7.1 Planning of product realization

BPS will plan and develop the processes needed for product realization. Planning of product realization will be consistent with the requirements of the other processes of the QMS.

In planning product realization, BPS will determine the following, as appropriate:

a) Quality objectives and requirements for the product.
b) The need to establish processes, documents, and provide resources specific to the product.(Figure 2)

c) Required verification, validation, monitoring, inspection and testing activities specific to the product and the criteria for product acceptance.
d) Records needed to provide evidence that the realization processes and resulting product meet requirements.

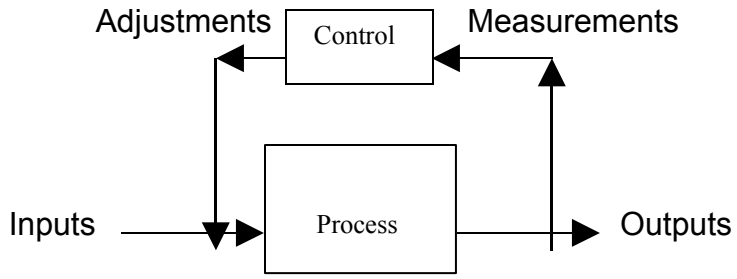

Figure 2

The output of this planning will be in a form suitable for BPS methods of operation.

7.2 Customer-related process

7.2.1 Determination of requirements related to the product

BPS will determine

a) Requirements specified by the customer, including the requirements for delivery and post-delivery activities.
b) Requirements not stated by the customer but necessary for specified or intended use, where known.
c) Statutory and regulatory requirements related to the product.
d) Any additional requirements determined by BPS.

7.2.2 Review of requirements related to the product

BPS will review the requirements related to the product. This review will be conducted prior to the commitment to supply a product to the customer and will ensure that

a) Product requirements are defined.
b) Contract or order requirements differing from those previously expressed are resolved.
c) BPS has the ability to meet the defined requirements.

Records of the results of the review and actions arising from the review will be maintained.

Where the customer provides no documented statement of requirement, the customer requirements will be confirmed by BPS before acceptance.

Where product requirements are changed, BPS will ensure that relevant documents are amended and that relevant personnel are made aware of the changed requirements.

7.2.3 Customer communication

BPS will determine and implement effective arrangements for communicating with customers in relation to

a) Product information.
b) Enquiries, contracts or order handling, including amendments.
c) Customer feedback, including customer complaints.

7.3 Design and development

7.3.1 Design and development planning

BPS will plan and control the design and development of product.

During the design and development planning, BPS will determine

a) The design and development stages.
b) The review, verification and validation that is appropriate to each design and development stage.
c) The responsibilities and authorities for design and development.

BPS will manage the interfaces between different groups involved in design and development to ensure effective communication and clear assignment of responsibility.

Planning output will be updated, as appropriate, as the design and development progresses.

7.3.2 Design and development inputs

Inputs relating to product requirements will be determined and records maintained. These inputs will include

a) Functional and performance requirements.
b) Applicable statutory and regulatory requirements.
c) Where applicable, information derived from previous similar designs.
d) Other requirements essential for design and development.

These inputs will be reviewed for adequacy. Requirements will be complete, unambiguous and not in conflict with each other.

7.3.3 Design and development outputs

The outputs of design and development will be provided in a form that enables verification against the design and development input and will be approved prior to release.

Design and development outputs will

a) Meet the input requirements for design and development.
b) Provide appropriate information for purchasing, production and for service provision.
c) Contain or reference product acceptance criteria.
d) Specify the characteristics of the product that are essential for its safe and proper use.

7.3.4 Design and development review

At suitable stages, systematic reviews of design and development will be performed in accordance with planned arrangements.

a) To evaluate the ability of the results of design and development to meet requirements.
b) To identify any problems and propose necessary actions.

Participants in such reviews will include representatives of functions concerned with the design and development stage(s) being reviewed. Records of the results of the reviews and any necessary actions will be maintained.

7.3.5 Design and development verification

Verification will be performed in accordance with planned arrangements to ensure that the design and development outputs have met the design and development input requirements. Records of the results of the verification and any necessary actions will be maintained.

7.3.6 Design and development validation

Design and development validation will be performed in accordance with planned arrangements to ensure that the resulting product is capable of meeting the requirements for the specified application or intended use, where known. Wherever practicable, validation will be completed prior to the delivery or implementation of the product. Records of the results of validation and any necessary actions will be maintained.

7.3.7 Control of design and development changes

Design and development changes will be identified and records maintained. The changes will be reviewed, verified and validated, as appropriate, and approved before implementation. The review of design and development changes will include evaluation of the effect of the changes on constituent parts and product already delivered.

Records of the results of the review of changes and any necessary actions will be maintained.

7.4 Purchasing

7.4.1 Purchasing process

BPS will ensure that purchased product conforms to specified purchase requirements. The type and extent of control applied to the supplier and the purchased product will be dependent upon the effect of the purchased product on subsequent product realization or the final product.

BPS will evaluate and select suppliers based on their ability to supply product in accordance with BPS requirements. Criteria for selection, evaluation and re-evaluation will be established. Records of the results of evaluation and any necessary actions arising from the evaluation will be maintained.

7.4.2 Purchasing information

Purchasing information will describe the product to be purchased, including where appropriate

a) Requirements for approval of product, procedures, processes and equipment.
b) Requirements for qualification of personnel.
c) QMS requirements.

BPS will ensure the adequacy of specified purchase requirements prior to their communication to the supplier.

7.4.3 Verification of purchased product

BPS will establish and implement the inspection or other activities necessary for ensuring that purchased product meets specified purchase requirements.

Where BPS or its customer intends to perform verification at the supplier's premises, BPS will state the intended arrangements and methods of product release in the purchasing information.

7.5 Production and service provision

7.5.1 Control of production and service provision

BPS will plan and carry out production and service provision under controlled conditions. Controlled conditions will include, as applicable

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

7.5.2 Validation of processes for production and service provision

BPS will validate any processes for production and service provision where the resulting output cannot be verified by subsequent monitoring or measurement. This includes any processes where deficiencies become apparent only after the product is in use or the service has been delivered.

Validation will demonstrate the ability of these processes to achieve planned results.

BPS will establish arrangements for these processes including, as applicable

a) Define criteria for review and approval of the processes.
b) Approval of equipment and qualification of personnel.
c) Use of specific methods and procedures.
d) Requirements for records.
e) Revalidation.

7.5.3 Identification and traceability

Where appropriate, BPS will identify the product by suitable means throughout product realization.

BPS will identify the product status with respect to monitoring and measurement requirements.

Where traceability is a requirement, BPS will control and record the unique identification of the product.

7.5.4 Customer property

BPS will exercise care with customer property while it is under BPS control or being used by BPS. BPS will identify, verify, protect and safeguard customer property provided for use or incorporation into the product. If any customer property is lost, damaged or otherwise found to be unsuitable for use, this will be reported to the customer and records maintained.

7.5.5 Preservation of product

BPS will preserve the conformity of product during internal processing and delivery to the intended destination. This preservation will include identification, handling, packaging, storage and protection. Preservation will also apply to the constituent parts of a product.

7.6 Control of monitoring and measuring devices

BPS will determine the monitoring and measurement to be undertaken and the monitoring and measuring devices needed to provide evidence of conformity of product to determined requirements.

BPS will establish processes to ensure that monitoring and measurement can be carried out and are carried out in a manner that is consistent with the monitoring and measurement requirements.

Where necessary to ensure valid results, measuring equipment will

a) Be calibrated or verified at specified intervals, or prior to use, against measurement standards traceable to international or national

measurement standards; where no such standards exist, the basis used for calibration or verification will be recorded.
b) Be adjusted or re-adjusted as necessary.
c) Be identified to enable the calibration status to be determined.
d) Be safeguarded from adjustments that would invalidate the measurement result.
e) Be protected from damage and deterioration during handling, maintenance and storage.

In addition, BPS will assess and record the validity of the previous measuring results when the equipment is found not to conform to requirements. BPS will take appropriate action on the equipment and any product affected. Records of the results of calibration and verification will be maintained.

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

8.0 Measurement, analysis and improvement

8.1 General

BPS will plan and implement the monitoring, measurement, analysis and improvement processes needed

a) To demonstrate conformity of the product.
b) To ensure conformity of the QMS.
c) To continually improve the effectiveness of the QMS.

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

8.2 Monitoring and measurement

8.2.1 Customer satisfaction

As one of the measurements of the performance of the QMS, BPS will monitor information relating to customer perception as to whether BPS has met customer requirements. The methods for obtaining and using this information will be determined.

8.2.2 Internal audit

BPS will conduct internal audits at planned intervals to determine whether the QMS

a) Conforms to the planned arrangements, to the requirements of applicable standards and to the QMS system requirements established by BPS.
b) Is effectively implemented and maintained.

An audit program will be planned, taking into consideration the status and importance of the processes and areas to be audited, as well as the results of previous audits. The audit criteria, scope, frequency and methods will be defined. Selection of auditors and conduct of audits will ensure objectivity and impartiality of the audit process. Auditors will not audit their own work.

The responsibilities and requirements for planning and conducting audits, and for reporting results and maintaining records will be defined in the Internal Audit Procedure.

The management responsible for the area being audited will ensure that actions are taken without undue delay to eliminate detected nonconformities and their causes. Follow-up activities will include the verification of the actions taken and the reporting of verification results.

8.2.3 Monitoring and measurement of processes

BPS will apply suitable methods for monitoring and, where applicable, measurement of the QMS processes. These methods will demonstrate the ability of the processes to achieve planned results. When planned results are not achieved, correction and corrective action will be taken, as appropriate, to ensure conformity of the product.

8.2.4 Monitoring and measurement of product

BPS will monitor and measure the characteristics of the product to verify that product requirements have been met. This will be carried out at appropriate stages of the product realization process in accordance with the planned arrangements.

Evidence of conformity with the acceptance criteria will be maintained. Records will indicate the person(s) authorizing release of product.

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

8.3 Control of nonconforming product

BPS will ensure that product which does not conform to product requirements is identified and controlled to prevent its unintended use or delivery. The controls and related responsibilities and authorities for dealing with nonconforming product will be defined in the Nonconforming Product Procedure.

BPS will deal with nonconforming product by one or more of the following ways:

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

Records of the nature of nonconformities and any subsequent actions taken, including concessions obtained, will be maintained.

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

When nonconforming product is detected after delivery or use has started, BPS will take action appropriate to the effects, or potential effects, of the nonconformity.

8.4 Analysis of data

BPS will determine, collect and analyze appropriate data to demonstrate the suitability and effectiveness of the QMS and to evaluate where continual improvement of the effectiveness of the QMS can be made. This will include data generated as a result of monitoring and measurement and from other relevant sources.

The analysis of data will provide information relating to

a) Customer satisfaction.
b) Conformity to product requirements.
c) Characteristics and trends of processes and products including opportunities for preventive action.
d) Suppliers.

8.5 Improvement

8.5.1 Continual improvement

BPS will continually improve the effectiveness of the QMS through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review.

8.5.2 Corrective action

BPS will take action to eliminate the cause of nonconformities in order to prevent recurrence. Corrective actions will be appropriate to the effects of the nonconformities encountered.

The Corrective Action Procedure has been established to define requirements for

a) Reviewing nonconformities (including customer complaints).
b) Determining the causes of nonconformities.
c) Evaluating the need for action to ensure that nonconformities do not recur.
d) Determining and implementing action needed.
e) Records of the results of action taken.

f) Reviewing corrective action taken.

8.5.3 Preventive action

BPS will determine action to eliminate the causes of potential nonconformities in order to prevent their occurrence. Preventive actions will be appropriate to the effects of the potential problems.

The Preventive Actions Procedure has been established to define requirements for

a) Determining potential nonconformities and their causes.
b) Evaluating the need for action to prevent occurrence of nonconformities.
c) Determining and implementing action needed.
d) Records of results of action taken.
e) Reviewing preventive action taken.