

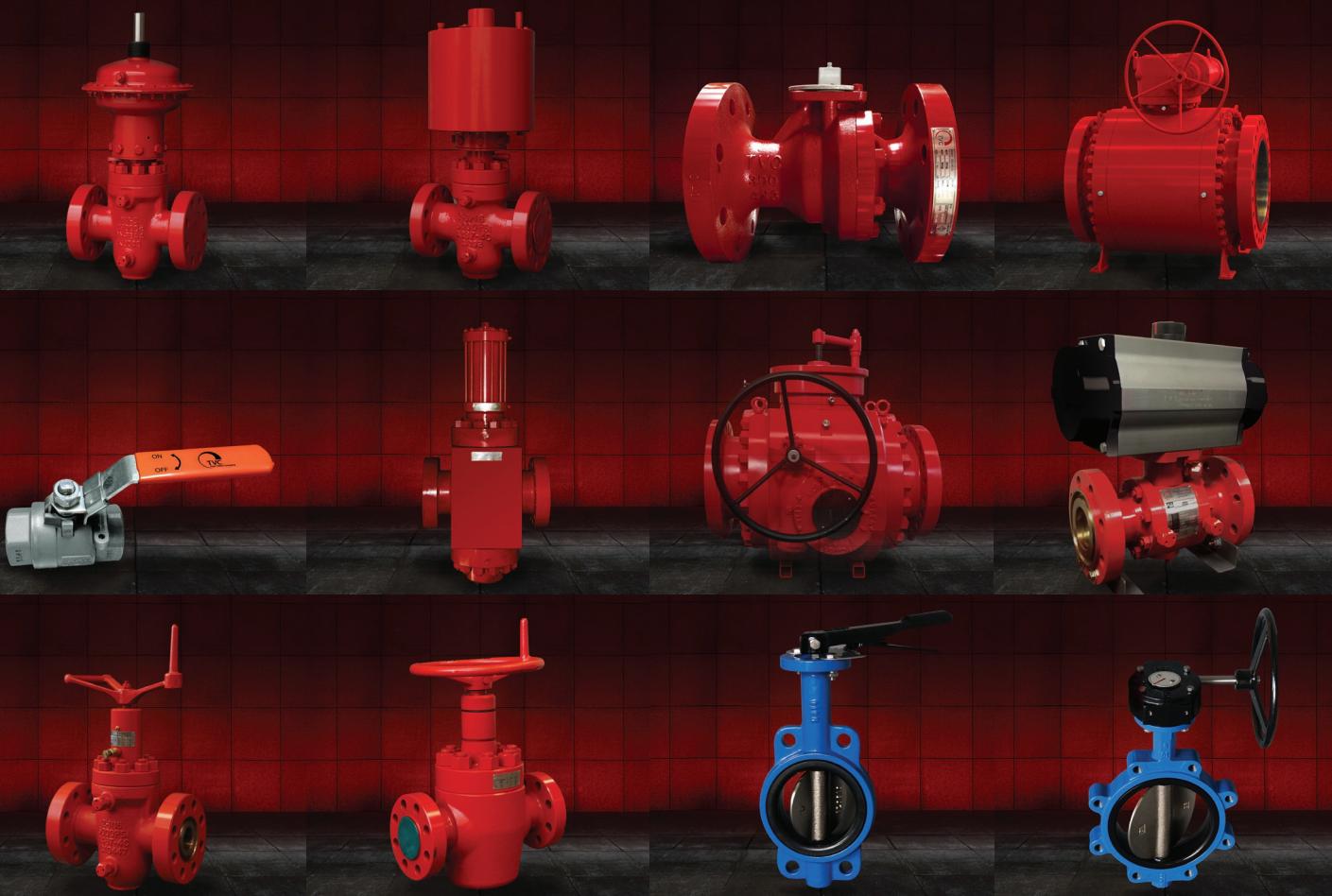


TVC

Quality Manual

OUTLINE

ENGINEERED FOR QUALITY & EXCELLENCE



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Quality Manual

OUTLINE

API Spec Q1 & ISO 9001 Latest Edition

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* For access to the full Quality Manual see our web site or contact our Quality Manager. Joey Green

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1.0 Purpose/Scope

1.1 General

Tiger Valve Company – focus is on the design, manufacture, and servicing of Gate Valves (Manual/Actuated) and Ball Valves for the Oil & Gas Industry. The design activities that are conducted at Tiger Valve Company are in accordance with the applicable industry standards, codes, and/or customer requirements. Applicable industry standards include but are not limited to; API, ISO, ANSI, NACE, ASME, ASTM, AWS. The goal of the quality management system at Tiger Valve Company referred to as the “Business Management System” (BMS), is continual improvement of processes and product to ensure ongoing customer satisfaction.

This manual establishes Tiger Valve Company policies concerning quality and refers to Quality Procedures that have been developed and implemented to ensure that all deliverables are in accordance with the latest editions of ISO 9001, API Spec Q1, API Spec 6A, API Spec 6D and specified customer requirements. The Quality Manager or designee is responsible for the control and distribution of this manual and of the processes contained within the electronic BMS. All elements of the BMS are considered proprietary/confidential and shall not be reproduced in any manner without the consent of the Quality Manager or their designee.

- 1.1.1** This manual shall be reviewed for continuing suitability and effectiveness at least once annually and when applicable standards are revised.
- 1.1.2** Nothing in this manual relieves Tiger Valve Company of its responsibility for complying with contractual requirements including work performed by Tiger Valve Company suppliers and subsidiaries. In the event of conflicting requirements between this manual and contract requirements, the contract requirements shall prevail provided no API requirements are violated, as it applies to Tiger Valve Company Certifications and API Licenses. Any conflicting requirements will be documented and the customer and/or the customer's representative are notified for resolution of differing requirements. This is to ensure that all applicable safety, environmental and industry standards are communicated to the customer to ensure that the customer's needs and expectations are met.

1.2 Exclusions

There are no exclusions.

Manufacturing of Tiger Valve Company products are carried out by approved suppliers. Tiger Valve Company inspects, assembles and tests all products, as applicable, by qualified personnel at the Tiger Valve Company facility. Personnel trained in accordance with the BMS processes may also verify the products offsite; such as at a vendor's facility or another Tiger Valve Company facility, when necessary. Final release of products shall be conducted by trained Tiger Valve Company personnel that are not responsible for the manufacture, assembly and/or repair of the product. Monogrammed product shall be monogrammed at the 15862 Diplomatic Plaza Dr. only.

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2.0 References

The Tiger Valve Company BMS was developed to simplify navigating and locating the necessary procedures, forms and instructions, etc. and further serves as a library for the revision management of the above described documents. When applicable industry standards are revised, a gap analysis is conducted by the Quality Manager, or designee, on the revisions and all affected processes in order to evaluate the extent and impact of any new requirements on the Tiger Valve Company BMS. If revisions are required, these will be made as soon as it is practical and in a timely manner. Revision history is maintained within the BMS which is a list of all revised procedures, forms and instructions. Department managers are informed by an email, a report or other effective means of communication of any revisions to processes that require revisions within their area of responsibility.

The general references are as follows;

- Business Management System Procedures,
- API Q1 – Latest Edition – Quality Management System Requirements,
- ISO 9001 & ISO/TS 29001 – Latest Edition – Quality Management System Requirements
- ISO 9000 Latest Edition – QMS – Fundamentals and Vocabulary Interaction of processes – See Figure 1.

3.0 Terms and Definitions

The terms and definitions listed in latest definitions or ISO 9001, API Spec Q1, API Spec 6A, and ISO 9000 latest edition – “Quality Management Systems – Fundamentals and Vocabulary” are used for general system and product items. Other terms used in this manual and in the procedures and instructions are defined within the respective documents.

4.0 Business Management System Requirements

4.1 Business Management System

4.1.1 General

The BMS was set up with continual improvement of the system, processes, product, and customer satisfaction in mind. The system complies with the requirements of API Q1 and ISO 9001. When additional or revised customer requirements and/or industry standards are introduced they are added to the BMS as needed. Effectiveness of the Business Management System is measured through Management Reviews, Internal Audits, Non-Conformances, and Corrective Actions. Customer requirements, experience, API specifications along with other applicable industrial standards are used to determine what processes are necessary to produce products and provide services that meet and/or exceed standards and overall requirements.

4.1.2 Quality Policy

The Quality Policy,

Tiger Valve Company — is committed to providing our customers with products and services that comply with requirements while meeting or exceeding their needs and expectations. In support of this we will continually improve the effectiveness of our business management system by setting annual goals and objectives and monitoring them throughout the year.

The Tiger Valve Company quality policy has been reviewed and approved by the facilities Top Management. This can be verified by the signature of the Executive Vice President and the Quality Managers signature on the quality policy. The quality policy is reviewed during subsequent management reviews to ensure that it;

- Remains appropriate to the organization in regards to the activities, products and services of the organization,
- Complies with requirements and states that the organization intends to continually improve the management system,
- Establishes that the quality objectives will be reviewed,
- Is communicated and understood in the organization,
- Is reviewed to ensure that it remains applicable to the organizations commitment to the customers.

The quality policy at Tiger Valve Company is posted in several places throughout the facility. Training programs, competency exams, and objectives have been developed to measure and continually improve the employee's knowledge of the quality policy, objectives and the overall BMS.

4.1.3 Quality Objectives

The quality objectives that have been established at Tiger Valve Company have been defined to be measurable and consistent with the quality policy. The quality objectives are reviewed during the management reviews by the management team and adjusted, added or deleted as determined during the management reviews. The status of the quality objectives are updated monthly using a comparison chart

and line charts to indicate the current status of the objectives. The objectives are posted in the shop and in the office for the employees to review at their convenience. Training on the quality policy and on the status of the objectives is conducted periodically to ensure that all employees are aware of the relevance of the objectives.

4.1.4 Planning

The Business Management System (BMS) was developed to be user-friendly. The design of the BMS ensures that it is easy for the user to navigate and to understand. This is crucial to the success of the program. Customer requirements and the requirements of API and ISO and the changes associated with them are factored in all levels of the BMS program.

Changes to customer requirements, and industry standards are reviewed, analyzed and incorporated into the BMS as needed and as deemed necessary by the Quality Manager or designee. In most cases, a gap analysis is conducted by reviewing the changes to the standards and determining whether or not the changes affect the Tiger Valve Company BMS program. If deemed necessary the required changes will be recorded on a Corrective Action Report but changes can be made using only the gap analysis.

Procedures that are being revised or developed are not made available for public viewing until they are reviewed and approved by the Quality Manager. All revisions and control of documents in the BMS are to be controlled in accordance with the Control of Documents and Records Procedure and listed and hyperlinked in the BMS Library.

4.1.5 Communication

4.1.5.1 Internal

Top Management ensures that the appropriate communication processes are established and the effectiveness of the quality management system is communicated.

Tiger Valve has established processes to ensure that:

- a) Importance of meeting customer, legal, and other applicable requirements is communicated to relevant functions within the organization; and
- b) Results of analysis of data are communicated to relevant levels and functions within the organization.

4.1.5.2 External

Top Management ensures that the external communications with external organizations, including customers takes place through the following:

- a) execution of inquiries, contracts, or other handling and amendments
- b) provision of product information, including product nonconformities identified after delivery to the customer

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- c) feedback and customer complaints; and
- d) When required by contract, providing information required by product quality plans and subsequent changes to those plans.

a) Identification of Processes

The documentation structure of the Tiger Valve Company Business Management System is sequentially numbered to coincide with the structure of API Q1 and ISO 9001 and consists of five tiers or levels. The system is maintained by electronic media, backed up nightly and maintained at an offsite facility to ensure that all documentation is electronically retrievable in case of system failure, disaster or any other event causing local loss of documentation and data.

Tier 1 The documentation that is contained in the tier 1 section of the BMS Library are the Numbering format and section names (per API Q1), the Quality Manual, the Quality Policy.

Tier 2 The tier 2 documents are the core procedures (or the top level procedures) that are used for the operation. These procedures explain what should be done.

Tier 3 The tier 3 documents are the work instructions.

Tier 4 The tier 4 documents are the forms that are related to the tier 1, tier 2, and tier 3 documents.

Tier 5 Job Descriptions necessary to define the requirements and core competency of each position.

Tier 6 Miscellaneous warranties/policies that are stand-alone documents and are not referenced in procedures or forms.

b) Interaction of Processes

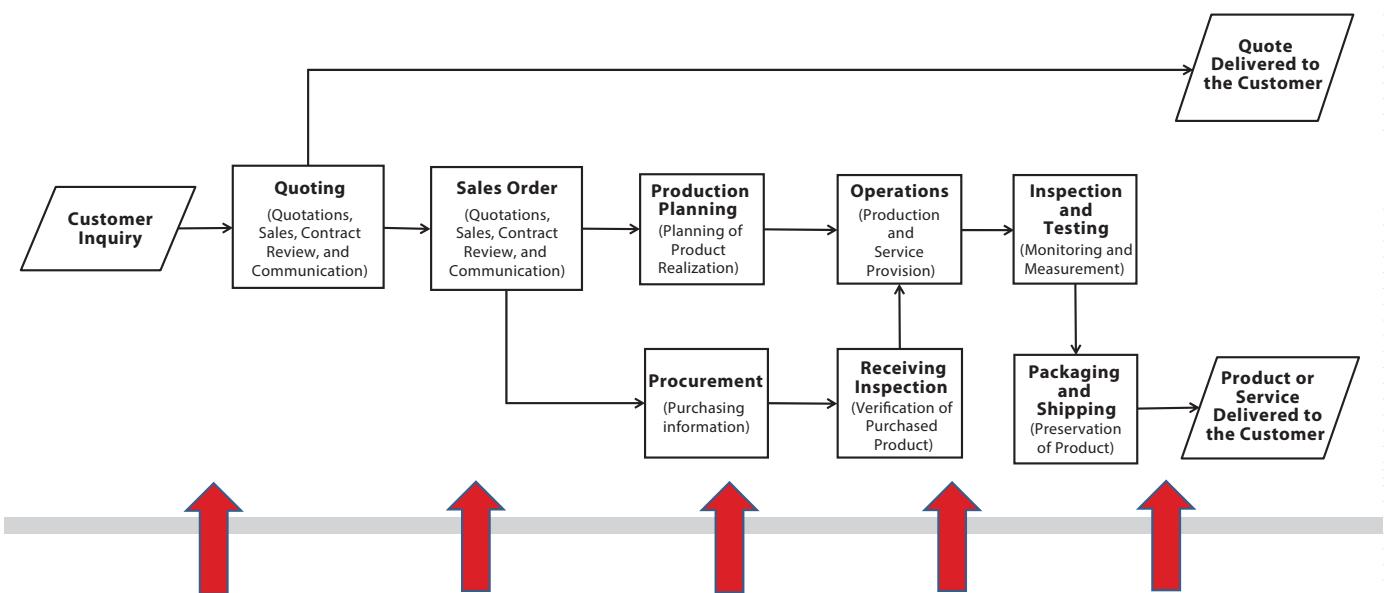
The interaction of processes is illustrated in Figure 1 below (see next page).

The processes that require validation through are identified in Figure 1.

Figure 1

Tiger Valve Company

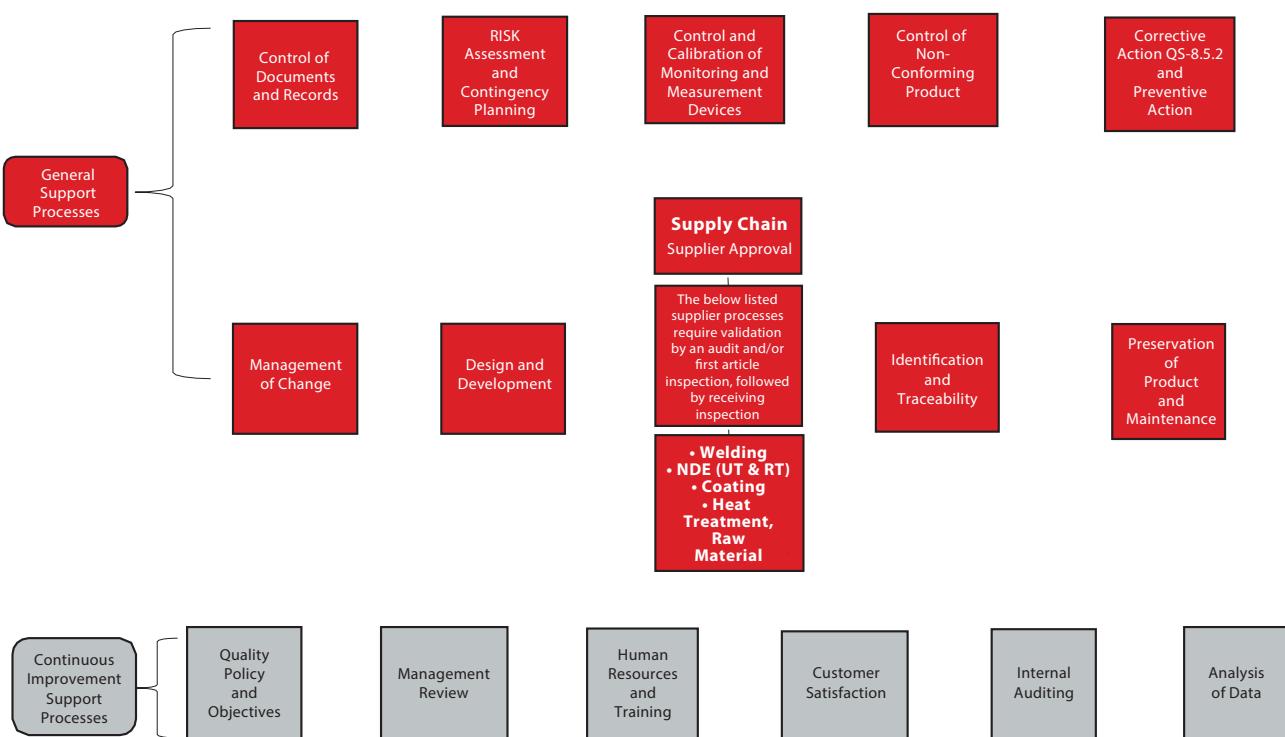
Interaction of Processes — Top Level Process Map



Tiger Valve Company Process Map Support Processes

NOTE 1: The process that are undefined require validation

NOTE 2: The below listed support procedures all play a role within the above Top Level Process Map



TVC Product Line

Ball Valves

- Flanged Trunnion Ball Valves
- Flanged Floating Ball Valves
- Metal Seated

Shut-Off Pig Valves

- Launchers
- Catchers
- Receivers

Butterfly Valves

- Soft Seat
- Wafer body
- Sizes 2" thru 24"
- Lugged body
- Pressure Rating 200psi

Actuators

- Rack & Pinion
- Scotch Yoke per application
- Max. Torque D.A. – 55,600 lbs. in.
- Max. Torque S.R. – 20,700 lbs. in.

API-6A Gate Valves

- | | | |
|----------------------|------------------------|--------------------------|
| • Expanding | • Slab | • Ball Screw Frac Valves |
| • 2,000 to 5,000 PSI | • 10,000 to 15,000 PSI | • 10,000 to 15,000 PSI |
| • 2-1/16" – 7-1/16" | • 1-13/16" – 5-1/8" | • 4-1/16" – 7-1/16" |

API-6A Wellheads

- | | | |
|------------------|------------------|-----------------------------------|
| • Casing Heads | • Tubing Hangers | • Components |
| • Casing Hangers | • Spools | • Tees (Standard) |
| • Tubing Heads | | • Crosses |
| | | • Tree Caps |
| | | • Goat Heads |
| | | • Seal Subs |
| | | • Additional Components Available |

Actuated Safety Valves

- | | |
|-------------|----------------------------|
| • Hydraulic | • Upper Assembly |
| • Piston | • Automated Valve Assembly |
| • Diaphragm | • Electro/Hydraulic |

**Parts for all Products and
Technical Engineering Support Available**

Limited Product Warranty



Tiger Valve Company (TVC) manufactured products warrants for, (a) twelve (12) months from date of installation or (b) eighteen (18) months from date of sales, whichever period expires first, to be free from defects in workmanship and materials, not caused or resulting from improper usage or application, provided all equipment is maintained in accordance with TVC "Valve & Equipment Storage Procedure".

Any repair work performed by TVC is warranted for twelve (12) months after completion of such repairs and applies only to work performed. Should TVC receive notice from Buyer within these twelve (12) months of any alleged defect in or nonconformance of any repair, then Buyer shall return the part or product to TVC specified service location at TVC request.

In the event TVC shall determine that the product is defective as a result of factory workmanship based upon such examination of the product which TVC may deem appropriate, TVC shall thereupon, at its sole option, (a) cause the defective product to be repaired, (b) replace with a substantially identical product, or (c) accept the return of a defective product and refund the purchasing price to the original purchaser. TVC shall bear all normal surface transportation costs to the original purchaser but shall in no event bear any installation, re-installation, engineering or other costs incurred in connection with repair or replacement.

TVC warranty liability shall be limited to repair, replacement or refund and shall not include claims for labor costs, expenses of Buyer resulting from defects, recovery under general tort law or strict liability or for damages resulting from delays, loss of use or other direct, indirect, incidental or consequential damages of any kind.

TVC will not be responsible for failures of products which have been in any way tampered with or altered by anyone other than an authorized representative of TVC utilizing the TVC Installation and Maintenance Procedure (IOM).

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, STATUTORY OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE WHICH EXCEED THE FOREGOING WARRANTY.

If you have questions regarding this warranty or if you need additional information concerning Tiger Valve Company products or services, please contact us at the address and number below.

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