QUALITY SYSTEM REQUIREMENTS FOR
Machining YFTFC002

PURPOSE:
This specification outlines the Quality System requirements for **Young & Franklin/Tactair Fluid Controls** suppliers. It is intended to assure that articles purchased from approved suppliers are as ordered and have been subjected to positive control during the supplier's handling and storage.

GENERAL:
The supplier's Quality System ***shall*** be documented in the form of a Quality Manual, supported by documented procedures as necessary. These documents ***shall*** be available for review by Young & Franklin/Tactair Fluid Controls.

Young & Franklin/Tactair Fluid Controls approval of the supplier's Quality System is limited to the location shown on Tactair's Purchase Order and is not transferable to the supplier's other stocking locations or affiliated companies.

YFTFC002 QUALITY SYSTEM REQUIREMENTS

1.0 MANAGEMENT RESPONSIBILITY
Management ***shall*** immediately notify Young & Franklin/Tactair Fluid Controls of any design or process change on their parts or any sub-tier supplied parts that affects fit, form or function or safety of product on this order and shall obtain the buyer's approval to proceed with the manufacture and delivery of this order.

Additionally, all suppliers agree to notify Young & Franklin/Tactair Fluid Controls in writing of any changes to quality system status (e.g. third party registration, ISO 9000, AS9100, NADCAP).

For all Fabricators, Processors, and Subcontract manufacturers: the supplier agrees to notify Young & Franklin/Tactair Fluid Controls and obtain approval for any major process change, change in facility, or any change in materials used in manufacturing or processing of Young & Franklin/Tactair Fluid Controls products.
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1.1 Quality Policy
The supplier ***shall*** define and document its quality policy. The quality policy ***shall*** be relevant to the supplier organizational goals and the expectations and needs of its customers. The supplier ***shall*** ensure that this policy is understood, implemented, and maintained at all levels of the organization.

1.2 Responsibility and Authority
The supplier's personnel performing quality functions ***shall*** have sufficient, well-defined responsibility, authority, and the organizational freedom to identify and evaluate quality problems, and to initiate, recommend, or provide solutions.

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1.3 Management Review
Management ***shall*** periodically review the status and adequacy of the quality system to ensure its continuing effectiveness in satisfying the supplier's stated quality policy and objectives. Records of such review ***shall*** be maintained.

2.0 QUALITY SYSTEM

2.1 General
The supplier ***shall*** establish, document, implement, and maintain a quality system to assure product compliance to specified requirements.

The supplier ***shall*** maintain a quality manual that includes or makes reference to quality system procedures and outline the structure of the documentation used in the quality system.

2.2 Quality System Procedures
The supplier's procedures ***shall*** provide for review of all new product requirements during the earliest practical phase of a contract.

2.3 Quality Planning
Quality planning will identify and make timely provisions for the special controls, processes, IM&TE, fixtures, tooling and training required for assuring article quality.

3.0 CONTRACT REVIEW

3.1 Review
The supplier's quality function ***shall*** assure the supplier's procurement documents incorporate applicable quality, technical requirements, and verifies that items are procured from approved sources when required by Young & Franklin/Tactair Fluid Controls Purchase Order.

3.2 Amendment to Contract
The supplier ***shall*** identify how an amendment to a contract is made and correctly transferred to the functions concerned within the supplier's organization.

3.3 Records
Records of contract reviews ***shall*** be maintained.

4.0 DOCUMENT AND DATA CONTROL

4.1 General
The supplier ***shall*** establish and maintain documented procedures to control all documents and data that relate to the requirements of this standard including, to the extent applicable, documents of external origin such as standards and customer drawings. In essence a system is maintained to control the initiation, revision, issue, and distribution of all Quality related documents.

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4.2 Document and Data Approval and Issue
The documents and data ***shall*** be reviewed and approved for adequacy by authorized personnel prior to issue. A master list or equivalent document-control procedure identifying the current revision status of documents ***shall*** be established and be readily available to preclude the use of invalid and/or obsolete documents.

4.3 Document and Data Changes
Changes to documents and data ***shall*** be reviewed and approved by the same functions or organizations that performed the original review and approval, unless specifically designated otherwise. The designated functions/organizations ***shall*** have access to pertinent background information upon which to base their review and approval.

5.0 PURCHASING

5.1 General
The supplier ***shall*** establish and maintain documented procedures to ensure that purchased product conforms to specified requirements.

5.2 Evaluation of Subcontractors
The supplier ***shall*** evaluate and select subcontractors on the basis of their ability to meet subcontract requirements, define the type and extent of control exercised by the supplier over subcontractors, and establish and maintain quality records of acceptable subcontractors.

5.3 Verification of Purchased Product
Where Young & Franklin/Tactair Fluid Controls proposes to verify purchased product at the supplier's or subcontractor's premises, Young & Franklin/Tactair Fluid Controls ***shall*** specify verification arrangements and the method of product release in the purchasing documents.

6.0 CONTROL OF CUSTOMER-SUPPLIED PRODUCT
The supplier ***shall*** establish and maintain documented procedures for the control of verification, storage, and maintenance of Young & Franklin/Tactair Fluid Controls supplied product. Any such product that is lost, damaged, or is otherwise unsuitable for use ***shall*** be recorded and reported to the Young & Franklin/Tactair Fluid Controls.

7.0 PRODUCT IDENTIFICATION AND TRACEABILITY
The supplier ***shall*** establish and maintain documented procedures for identifying product by suitable means from receipt and during all stages of production, delivery, and installation.

The supplier ***shall*** establish and maintain documented procedures for unique identification of individual product or batches. This identification ***shall*** be recorded.

8.0 PROCESS CONTROL
The Supplier ***shall*** identify and plan the production, installation, and servicing processes which directly affect quality and ***shall*** ensure that these processes are carried out under controlled conditions.
Controlled conditions ***shall*** include the following:

- Documented procedures defining the manner of production, installation, and servicing, where the absence of such procedures could adversely affect quality;
- Use of suitable production, installation, and servicing equipment, and a suitable working environment;
- Compliance with reference standards/codes, quality plans, and/or documented procedures;
- Monitoring and control of suitable process parameters and product characteristics;
- Approval of processes, equipment & personnel as appropriate;
- Criteria for workmanship, which ***shall*** be stipulated in the clearest practical manner (e.g., written standards, representative samples, or illustrations);
- Suitable maintenance of equipment to ensure continuing process capability.

Where the results of processes cannot be fully verified by subsequent inspection and testing of the product and where, for example, processing deficiencies may become apparent only after the product is in use, the processes ***shall*** be carried out by qualified operators and/or ***shall*** require continuous monitoring and control of process parameters to ensure that specified requirements are satisfied.

The requirements for any qualification of process operations, including associated equipment and personnel ***shall*** be specified.

Records ***shall*** be maintained for qualified processes, equipment, and personnel, as appropriate.

9. INSPECTION AND TESTING

The supplier ***shall*** establish and maintain documented procedures for inspection and testing activities in order to verify that the specified requirements for the product are met. The required inspection and testing, and the records to be established, ***shall*** be detailed in the quality plan or documented procedures.

9.1 Receiving Inspection and Testing

The supplier ***shall*** ensure that incoming product is not used or processed until it has been inspected or otherwise verified as conforming to specified requirements. Verification of the specified requirements ***shall*** be in accordance with the quality plan and/or documented procedures.

9.2 In-process Inspection and Testing

The supplier ***shall***:

- Inspect and test the product as required by the quality plan and/or documented procedures;

- Hold product until the required inspection and tests have been completed or necessary reports have been received and verified, except when product is released under positive-

recall procedures ***shall*** not preclude the activities.

9.3 Final Inspection and Testing

The supplier ***shall*** carry out all final inspection and testing in accordance with the quality plan and/or documented procedures to complete the evidence of conformance of the finished product to the specified requirements.

9.4 Inspection and Test Records

The supplier ***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. Where the product fails to pass any inspection and/or test, the procedures for control of non-conforming product ***shall*** apply.

Records ***shall*** identify the inspection authority responsible for the release of product.

10. CONTROL OF INSPECTION, MEASURING, AND TEST EQUIPMENT

Control and calibration of instrumentation and calibration standards ***shall*** be in accordance with the requirements of ISO-10012-1 and ANSI/ASQ Z 540-1. The supplier ***shall*** establish and maintain documented procedures to control, calibrate, and maintain inspection, measuring, and test equipment (including test software) used by the supplier to demonstrate the conformance of product to the 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.

Where test software or comparative references such as test hardware are used as suitable forms of inspection, they ***shall*** be checked to prove that they are capable of verifying the acceptability of product, prior to release for use during production, installation, or servicing, and ***shall*** be rechecked at prescribed intervals. The supplier ***shall*** establish the extent and frequency of such checks and ***shall*** maintain records as evidence of control.

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

10.1 Control Procedure

The supplier ***shall***:

- 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;
- Identify all inspection, measuring, and test equipment that can affect product quality, 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 standards exist, the basis used for calibration ***shall*** be documented;

- 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;
- Identify inspection, measuring, and test equipment with a suitable indicator or approved identification record to show the calibration status;
- Maintain calibration records for inspection, measuring, and test equipment
- Assess and document the validity of previous inspection and test results when inspection, measuring, and test equipment is found to be out of calibration;
- Ensure that the environmental conditions are suitable for the calibrations, inspections, measurements, and tests being carried out;
- Ensure that the handling, preservation, and storage of inspection, measuring, and test equipment is such that the accuracy and fitness for use are maintained;
- Safeguard inspection, measuring, and test facilities, including both test hardware and test software, from adjustments which would invalidate the calibration setting.

11.0 INSPECTION AND TEST STATUS

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 tests performed. The identification of inspection and test status ***shall*** be maintained, as defined in the quality plan and/or documented procedures, throughout production, installation, and servicing of the product to ensure that only product that has passed the required inspections and tests or released under an authorized concession is dispatched, used, or installed.

12.0 CONTROL OF NONCONFORMING PRODUCT

The supplier ***shall*** establish and maintain documented procedures to ensure that product that does not conform to specified requirements is prevented from unintended use or installation. This control ***shall*** provide for identification, documentation, evaluation, segregation (when practical), disposition of nonconforming product, and for notification to the functions concerned.

12.1 Review and Disposition of Nonconforming product

The responsibility for review and authority for the disposition of nonconforming product ***shall*** be defined.

- Non-conforming product ***shall*** be reviewed in accordance with documented procedures. It may be
- Reworked to meet the specified requirements,
- Accepted with or without repair by concession (when approved by customer),
- Rejected and/or scrapped.

Where required by the contract, the proposed use or repair of product 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.

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

13.0 CORRECTIVE AND PREVENTIVE ACTION

13.1 General

The supplier ***shall*** establish and maintain documented procedures for implementing corrective and preventive action.

Any corrective or preventive action taken to eliminate the causes of actual or potential non-conformities ***shall*** be to a degree appropriate to the magnitude of problems and commensurate with the risks encountered.

The supplier ***shall*** implement and record any changes to the documented procedures resulting from corrective and preventive action

13.2 Responding to Corrective Action Requests.

The supplier ***shall*** respond to a corrective action request in a timely manner. A letter sent to the supplier from Young & Franklin/Tactair Fluid Controls gives a description of non-conformities along with a due date that the supplier ***shall*** respond by. If the supplier does not respond to the corrective action by the due date, their approved supplier status may be revoked and payment for products may be withheld.

14.0 HANDLING, STORAGE, PACKAGING, PRESERVATION, AND DELIVERY

The supplier ***shall*** establish and maintain documented procedures for handling, storage, packaging, preservation, and delivery of product.

14.1 Handling

The supplier ***shall*** provide methods of handling product that prevent damage or deterioration.

14.2 Storage

The supplier ***shall*** use designated storage areas or stock rooms to prevent damage or deterioration of product, pending use or deliver. 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.

14.3 Packaging

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

14.4 Preservation

The supplier ***shall*** apply appropriate methods for preservation and segregation of product when the product is under the supplier's control.

14.5 Delivery

The supplier ***shall*** arrange for the protection of the quality of product after final inspection and test. Where contractually specified, this protection ***shall*** be extended to include delivery to destination.

15.0 CONTROL OF QUALITY RECORDS

The supplier ***shall*** establish and maintain documented procedures for identification, collection, indexing, access, filing, storage, maintenance, and disposition of quality records.

The supplier ***shall*** maintain adequate records of all inspections and tests. The records ***shall*** indicate the nature and number of observations made, the number and type of deficiencies found, the quantities approved and rejected and the nature of corrective action taken as appropriate. Such records ***shall*** be made available to Tactair upon request; and ***shall*** be retained for ten years after final payment under the related P.O. or for an additional period as imposed in the P.O.

All quality records ***shall*** be legible 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.

Records may be in the form of any type of media, such as hard copy or electronic media.

16.0 INTERNAL QUALITY AUDITS

The supplier ***shall*** establish and maintain documented procedures for planning and implementing internal quality audits to verify whether quality activities and related results comply with planned arrangements and to determine the effectiveness of the quality system.

Internal quality audits ***shall*** be scheduled on the basis of the status and importance of the activity to be audited and ***shall*** be carried out by personnel independent of those having direct responsibility for the activity being audited.

The results of the audits ***shall*** be recorded 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 audit activities ***shall*** verify and record the implementation and effectiveness of the corrective action taken.

The results of internal quality audits form an integral part of the input to management review activities.

17.0 TRAINING

The supplier ***shall*** establish and maintain documented procedures for identifying training needs and provide for the training of all personnel performing activities affecting quality. Personnel performing specific assigned tasks ***shall*** be qualified on the basis of appropriate education, training and/or experience, as required. Appropriate records of training ***shall*** be maintained.

18.0 STATISTICAL TECHNIQUES

The supplier ***shall*** identify the need for statistical techniques required for establish, controlling, and verifying process capability and product characteristics.

The supplier ***shall*** establish and maintain documented procedures to implement and control the application of the statistical techniques identified.