IDEAL INSTRUMENT COMPANY, INC.

QUALITY CONTROL MANUAL

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TABLE OF CONTENTS

1.0 SCOPE

It is the purpose of the specification to outline the organization, responsibilities and requirements of the Quality Control Department of Ideal Instrument Company Inc. These requirements pertain to the documentation and inspection necessary to assure product conformance to all drawing, specification, purchase order, and contractual requirements. It is not the intent of this specification to supersede the customers quality assurance program, specifications, and or referenced military documentation. In the case of conflict, the following order of precedence applies: purchase order, part or material specification, referenced military specification, and Ideal Instrument Quality Assurance Policy.

2.0 POLICY

The purpose of this specification is to maintain a quality program to assure the compliance of supplies, materials, and services with the requirements of the purchase order. This policy is also to remain flexible as to meet with special customer or government requirements. The Ideal Instrument Company Quality Assurance Program is ISO compliant and will meet any ISO requirement of the customer or government agency. It is also the policy of Ideal Instrument Company Inc. that this Quality Assurance Program be in effect only when required by the customer or government agency per contract.

3.0 RESPONSIBILITY

It is the responsibility of Ideal Instrument Company Inc. to provide and maintain a quality control system that is effective to assure the delivery of machined parts acceptable to the customer. It is also the responsibility of the Quality Control Department to inspect and deliver machined parts that comply with all requirements of the purchase order, part specifications, revisions, and this specification. It is the responsibility of the quality control manager to review this specification annually, and to alter and/or initiate new procedures as needed to ensure the highest level of quality assurance for our customers.

4.0 ORGANIZATION

All production personnel are to report all or any quality issues to the Quality Control Manager. It is the responsibility of the Quality Control Manager to identify and evaluate quality problems and to initiate or provide solutions to correct such problems. When applicable, the Quality Control Manager will work in conjunction with the Vice President and/or Operations Manager to further correct quality issues.

5.0 DOCUMENTATION

A work order and shop traveler throughout the manufacturing process will accompany all jobs. The work order will include customer and purchase order number, drawing number and current revision level, quantity ordered and due date, specific material to be used with corresponding control or certification number. A special procedures or requirements section and a work status/inspection area. The shop traveler will indicate

the customer, drawing number and current revision level, the operation performed and by whom, and in-process inspection status. First piece inspection is required for each operation performed. The quality control technicians personal inspection stamp will indicate all first piece and in-process inspections.

6.0 DRAWING CHANGES AND REVISIONS

All drawings will be checked by the Quality Control Manager and Operations Manager for correct revision levels against customers purchase order before being released to shop floor. The Operations Manager must complete all changes to original purchase orders and/or revisions. No changes will be made in production without prior notification of the Quality Control Department. All necessary changes will be completed by Quality Control. These changes will be dated and stamped by Quality Manager. All changes will be kept on file.

7.0 RAW MATERIALS

All raw materials received by Ideal Instrument Company will be checked against the drawing or purchase order for conformance. Raw material will be plainly marked with purchase order number and drawing number to which it is to be used. Certified Material Test Reports or Certificates of Analysis will be kept on file and provided upon request.

8.0 STOCK CONTROL

Ideal Instrument Company purchases only enough raw materials to fulfill quantities of parts specified in purchase order. Any excess raw materials are returned to vender for credit, eliminating any chance of mix-up. All general-purpose raw materials, (material used for fixtures etc.) are color coded for material type and stored in the general-purpose stock rack. All adhesives and bonding materials are segregated and properly stored in an area shielded from extreme heat and cold. The shelf life dates are monitored monthly. Out of date products are properly disposed of.

9.0 INSPECTION STAMPS

Inspection stamps are issued to each quality control technician. These stamps are unique as to identify the individual technician. Samples of these stamps are kept on file for reference to that technician. These stamps will be used as an approval signature by the quality control technician during all phases of incoming, in-process, first article, and final inspection. In the event a quality control technician should leave Ideal Instrument Company, or be removed from Quality Control Department, that persons inspection stamp will immediately be destroyed. Any new members to Quality Control Department will be issued his or her own personal inspection stamp. A sample of this new stamp will be kept on file.

10.0 INSPECTION AND TESTING

10.1 INCOMING INSPECTION

The Quality Control Technician will inspect all incoming material, supplies, and parts from outside venders. The results of this inspection will be documented and kept on file in the Quality Control Department.

10.2 IN-PROCESS INSPECTION

The Quality Control Technician will perform all in-process and first piece inspections. These inspections will be dated and stamped on the shop traveler.

10.3 FINAL INSPECTION

The Quality Control Technician will perform a final inspection of all outgoing parts. This report will contain lot size, lot number, quantity of order, specified dimensions to be measured, and actual dimension size. A copy of this report will be shipped with parts to the customer. A copy will also remain on file in the Quality Control Department.

10.4 FIRST ARTICLE INSPECTION

When required by contract, a first article inspection will be conducted. This piece will be segregated from lot and marked “FIRST ARTICAL”. All dimensions and notes will be inspected and checked against customer specification and listed on a separate inspection report with actual dimensions listed next to them. This report will be labeled FIRST ARTICLE. A copy of this report will be shipped with parts to the customer. A copy will also remain on file in the Quality Control Department.

11.0 INSPECTION SAMPLING

All inspection sampling will be in accordance with the requirements of , ANSI/ASQ Z 1.4 2008 or as required by customer or government specifications. In the event that 2 or more consecutive lots have been rejected on original inspection, sampling will be tightened.
When tightened inspection is in effect, normal inspection shall not resume until 5 consecutive lots have been accepted on original inspection.

11.1 LOT SAMPLING AND IDENTIFICATION

All jobs requiring split delivery or jobs that will be shipped in separate lots, will be assigned a lot number unique to that individual lot. Each individual lot will use inspection-sampling procedures decried in section 11.0. Every lot will be inspected using the procedures described in sections 10.1-10.4, or as per

contract. All inspection reports, material certifications, and pertinent documentation related to each lot will be filed together under that purchase order and kept on file in the Quality Control Department.

12.0 INSPECTION STATUS

All products, from incoming inspection, throughout final shipment, will be identified as to inspection and work status. This identification will be in the form of inspection sheet, shop traveler, or color-coded tags where applicable. The color-coded tags are as follows:

Green Tag – Okay to run or ship parts.
Yellow Tag – Hold, stop work or shipping process.
Red Tag – Piece has been rejected by Quality Control.

13.0 NONCONFORMING MATERIALS

During in process, incoming, and final inspection, any material found non-conformant will immediately be segregated and marked with a red tag. Manufacturing process will stop until the root cause of defect has been determined by Quality Control and shop superintendent. Once alternative procedures have been developed to ensure no reoccurrence of problem, defective material will immediately be destroyed for scrap to avoid intermingling with in-spec materials. The root cause of problem, and procedures implemented to eliminate problem will be documented on a corrective action form. A copy of the corrective active form will be kept with shop traveler, and another copy will be kept on file for future review.

14.0 CORRECTIVE ACTION

All material determined non-conformant from either in plant manufacturing or from outside subtier venders will be subject to filling out a Non-conforming Material Report. This report contains the customer purchase order number, part number, lot number, outside vender or person responsible for non-conformance. Lot size, sample size, quantity found non-conformant, dimension per print, actual dimension, and disposition (as is, rework, scrap), must be completed by Quality Control Technician. The Corrective Action section will show root cause of non-conforming material and corrective action taken to prevent reoccurrence. The Corrective Action section must be completed by either the shop superintendent or Quality Control and approved by Quality Control. Outside venders must complete and return Non-conforming Material Report, and Ideal Instrument Company Quality Control Manager must approve corrective action taken, before Ideal Instrument Company accepts any more shipments from this vender.

15.0 REPAIR AND REWORK OF NON-CONFORMING MATERIALS

The repair or rework of non-conforming materials will be accomplished only after proper notification and approval of the customer. This approval must be in the form of

written instructions that are signed and dated by customer. Verbal approval or instruction by the customer will not be accepted.

16.0 CALIBRATION OF MEASURING AND TEST EQUIPMENT

Ideal Instrument Company Quality Control Department is responsible for the calibration and maintenance of all measuring and test equipment. The calibration of all gauges measuring and inspection tools and equipment is in accordance with ANSI/NCSL Z540-1-1994. All calibrations will be conducted in a climate-controlled environment.

16.1 LABELING

Each piece of measuring or test equipment will be labeled indicating: serial number, last date calibrated, and date next calibration to be performed. Measuring or test equipment not requiring calibration will be labeled CALIBRATION NOT REQUIRED. Measuring or test equipment found defective or out of calibration will be labeled OUT OF CALBRATION. DO NOT USE.

16.2 CALIBRATION SCHEDULE

All measuring and test equipment including size blocks and standards are calibrated every 5 years by Hunt Metrology Inc. Results of these calibrations are kept on file and are available for review by the customer or government agency at any time.

16.2.1 IN-HOUSE CALIBRATION

The Quality Control Department will perform in-house calibration on all employee supplied measuring equipment deemed suitable for inspection every 12 months to ensure acceptable limits are maintained. Records of the calibrations will be maintained and reviewed by the Quality Control Department and analyzed to determine the frequency of calibration and to determine any trends of possible future problem areas.

16.3 FAULTY MEASURING AND TEST EQUIPMENT

It is the responsibility of the Quality Control Department to evaluate the consequences of any equipment found to be beyond calibration limits and to initiate corrective action and/or recall as warranted. The customer will be notified if any material has been shipped that was inspected and/or tested using equipment found to be beyond unacceptable limits. The possible consequences will be noted and corrective action will be taken. All material that has not been shipped to the customer and that was inspected and/or tested using equipment found to be beyond acceptable limits will be segregated and tagged until such time as re-inspection and/or retesting has been accomplished.

In the event any measuring or test equipment is found to be beyond acceptable limits, the equipment is tagged and removed from service. Whenever

practical, repairs to defective equipment will be performed by qualified outside facilities and must be returned with a Certificate of Accuracy. Calibration of all repaired measuring or test equipment must be performed by Hunt Metrology Inc. before returning to service.

16.4 NEW MEASURING AND TEST EQUIPMENT

All new measuring or test equipment is checked for acceptability and will be calibrated before being released for use.

17.0 RECORDS

Ideal Instrument Company will maintain an accurate file of all jobs and services performed at this facility or procured through another facility for a period of 3 years, unless otherwise outlined by customer contract. This file will contain all shop travelers, inspection reports, test results, material Certificates of Analysis, revisions, corrective actions, and any other documentation generated during that contractual period. These records are available for review by the customer or government agency at any time upon request.

18.0 SUBTIER VENDORS

All procurement of services from subtier vendors will be required to provide Ideal Instrument Company with inspection and test reports conducted and Certificate of Analysis on all material and/or services provided. Vendors will be provided with all pertinent documentation and information to ensure full compliance with drawings and specifications required. In the event non-conforming materials are found, vendor will be issued a Non-conforming Materials Report. This report must be returned along with the completed corrective action section to the Ideal Instrument Company Quality Control Department for review and approval. No future shipments will be accepted until this process is complete and Ideal Instrument Company Quality Control Department has approved all changes to procedures. Subtier vendors are selected on either past performance, qualification of services required, or approved or required source of procurement by the customer or government agency. Subtier vendor performance ratings are kept on file for evaluation.

19.0 SPECIAL PROCESSES

Special processes other than machining or bonding of materials (welding, plating, brazing, soldering, etc.) are procured to outside vendors. These vendors are qualified as described in section 17.0

20.0 SOURCE INSPECTION

Ideal Instrument Company will fully cooperate with customer or government source inspection. It is understood that such inspections shall not constitute acceptance nor shall it in anyway replace contractor inspection or otherwise relieve Ideal Instrument Company of its responsibility to furnish an acceptable end item.

21.0 CUSTOMER OR GOVERNMENT SUPPLIED MATERIAL

Ideal Instrument Company Quality Control will inspect any customer or government supplied materials or equipment upon receipt to determine that the material is complete, of proper type, size, or grade, and that no damage has occurred during transit. The customer or government agency will be notified if material is damaged or found unsuitable for use. Customer or government supplied materials or equipment will be stored under suitable conditions as to prevent damage or deterioration. Periodic inspections will be conducted by Quality Control to ensure these conditions remain suitable and that no damage or deterioration has occurred. Any customer or government supplied materials or equipment will be used on specified purchase order only, unless otherwise instructed in writing.

22.0 PACKAGING AND SHIPPING

It is the responsibility of the Quality Control Department to ensure proper packaging of all materials as to prevent deterioration or damage during in process manufacturing and shipping. It is also the responsibility of the Quality Control Department that special packaging procedures, required documentation and invoices are included, and proper shipping labels and bar coding labels be correctly placed on shipping containers as instructed in customers purchase order.