

**Table of Contents**

<b>Thaler Machine Company LLC SQAR Preface.....</b>	<b>3</b>
<b>Applicability.....</b>	<b>3</b>
<b>Supplemental Quality Assurance Requirements .....</b>	<b>4</b>
<b>200. Export Requirements (ITAR, EAR, ECI, OOU, etc.).....</b>	<b>4</b>
<b>201. Post Award Review .....</b>	<b>4</b>
<b>202. Purchase Order Review .....</b>	<b>5</b>
<b>203. Business Continuity Management .....</b>	<b>5</b>
<b>204. QMS Certified to AS9100 .....</b>	<b>5</b>
<b>205. QMS Certified to ISO-9001 .....</b>	<b>6</b>
<b>206. QMS Compliant to ISO-9001 or AS9100 .....</b>	<b>6</b>
<b>207. NADCAP Accreditation.....</b>	<b>7</b>
<b>208. A2LA Accreditation .....</b>	<b>7</b>
<b>209. Approved Inspection System.....</b>	<b>7</b>
<b>210. DFARS Qualifying Country .....</b>	<b>7</b>
<b>211. DFARS 252.225-7008 Restriction on Acquisition of Specialty Metals .....</b>	<b>7</b>
<b>212. DFARS 252.225-7009 Restriction on Acquisition of Certain Articles Containing Specialty Metals.....</b>	<b>7</b>
<b>213. DFARS 252.204-7012, Safeguarding Covered Defense Information &amp; Cyber Incident Reporting. ....</b>	<b>8</b>
<b>214. Baseline-Process Freeze .....</b>	<b>8</b>
<b>215. Production Readiness Review .....</b>	<b>8</b>
<b>216. Certification of Conformance (CofC) - Supplier.....</b>	<b>8</b>
<b>217. Furnace Charts Required .....</b>	<b>9</b>
<b>218. Raw Material Certification or Test Report (Metals, Chemicals, Polymers, etc.).....</b>	<b>9</b>
<b>219. Single Lot of Material .....</b>	<b>10</b>
<b>220. Chemical Test (Actuals).....</b>	<b>10</b>
<b>221. Physical Test (Actuals).....</b>	<b>10</b>
<b>222. Functional Test .....</b>	<b>10</b>
<b>223. Pressure or Leak Test .....</b>	<b>10</b>
<b>224. Nondestructive Test.....</b>	<b>10</b>
<b>225. Process Sample Evaluation Test .....</b>	<b>10</b>
<b>226. Destructive Physical Analysis Test .....</b>	<b>10</b>
<b>227. Dual Testing .....</b>	<b>11</b>
<b>228. Dual Inspection .....</b>	<b>11</b>
<b>229. 100% Inspection Required .....</b>	<b>11</b>
<b>230. 200% Critical Safety Inspection .....</b>	<b>11</b>
<b>231. Designated Sub Tier.....</b>	<b>11</b>

232.	<b>Witness Samples</b> .....	11
233.	<b>Additional Witness Samples</b> .....	11
234.	<b>Witness Sample Data</b> .....	11
235.	<b>Additional Testing Requirements Involved</b> .....	11
236.	<b>Product Identification and Traceability</b> .....	11
237.	<b>Chain of Custody</b> .....	11
238.	<b>Cage with lot number</b> .....	11
239.	<b>Item Serialization</b> .....	12
240.	<b>Lot Control and Traceability – Raw Materials</b> .....	12
241.	<b>Lot Control and Traceability – Commercial Off The Shelf (COTS), Customer Furnished Materials (CFM) Items</b> .....	12
242.	<b>Calibration Report</b> .....	12
243.	<b>Calibration Certification</b> .....	12
244.	<b>Source Inspection Required</b> .....	13
245.	<b>Source Surveillance Required</b> .....	13
246.	<b>Government Source Surveillance</b> .....	13
247.	<b>FAA Surveillance</b> .....	14
248.	<b>Control Plan/Locked Process</b> .....	14
249.	<b>Drawing and Change Control</b> .....	14
250.	<b>Process Procedures and Documentation</b> .....	14
251.	<b>Inspection, Test and Acceptance</b> .....	14
252.	<b>Inspection Report</b> .....	15
253.	<b>Inspection Report – Thaler Machine Company LLC Format</b> .....	15
254.	<b>First Article Inspection Required/Maintained – AS9102 Required</b> .....	15
255.	<b>First Article Inspection Plan Required</b> .....	16
256.	<b>First Article Inspection Plan</b> .....	16
257.	<b>As-Built Record or Log</b> .....	16
258.	<b>Supplying Controlled Shelf-Life Material</b> .....	17
259.	<b>Material Safety Data Sheet (MSDS or SDS)</b> .....	17
260.	<b>Process Flow and PFMEA Required and Maintained</b> .....	17
261.	<b>Raw Material Approval Prior to Manufacturing of Product</b> .....	17
262.	<b>3rd Party Independent Inspection/Testing</b> .....	17
263.	<b>Control of 3rd Party Independent Inspection/Testing</b> .....	17
264.	<b>Control of Special Processes and Certification</b> .....	17
265.	<b>Inspection Equipment – Supplier Furnished</b> .....	18
266.	<b>Inspection Equipment – Buyer Designated</b> .....	19
267.	<b>Safety Critical Characteristic Calibration Period and No Due Date Extension</b> .....	19

268.	Statistical Process Control / Capability Analysis .....	19
269.	Characteristics Not Verifiable Upon Receipt .....	20
270.	Inspection Sampling Plan C=0 .....	20
271.	Honeywell SPOC 128 Inspection Sampling Plan .....	21
272.	Non-destructive Evaluation (NDE) .....	22
273.	No Glass Beads .....	22
274.	Weld Schedule .....	23
275.	No halogenated Solvents .....	23
276.	Supplier Record Retention – X years .....	23
277.	Military Specification Cancellation .....	24
278.	Foreign Object Damage or Debris Prevention (FOD) .....	24
279.	Plated Components, Assemblies and Mechanical Items .....	24
280.	Packaging Time, Temperature, Static Discharge, or Environmentally Sensitive Items .....	24
281.	Packaging Returned Product and Test Articles/Coupons, etc. ....	24
282.	Electrostatic Discharge Protection (ESD) .....	24
283.	As-Built Configuration List .....	25
284.	Shelf-Life Requirements – Thaler Machine Company LLC Consumable Material .....	25
285.	Shelf-Life Reporting for Supplier Used Material .....	25
286.	Hazardous Materials .....	25
287.	Training .....	26
288.	Sub Tier Procurement .....	26
289.	Sub tier Supplier Evaluation, Selection, and Monitoring .....	26
290.	Annual Validation .....	26

**Thaler Machine Company LLC SQAR Preface**

This manual contains requirements that are applicable when invoked by Thaler Machine Company LLC Purchase Orders. Requirements include the mandatory use of this manual for Contract Review and Quality Planning activities. The Thaler Machine Company LLC SQAR Manual is controlled in electronic format as presented on the Thaler Machine Company LLC website. Paper copies, and electronic copies downloaded and saved to a local hard drive are Uncontrolled.

Suppliers shall visit the manual online to check for changes that may be identified electronically. If the Supplier (or any sub-tier) is working to a Purchase Order pre-dating the most current Thaler Machine Company LLC SQAR Manual release date, the Supplier may request authorization to work to the most current SQAR by requesting a Purchase Order revision from the Thaler Machine Company LLC Buyer.

Descriptive headings used in this Contract are for convenience of reference only and shall not be considered in its construction.

**Applicability**

The Thaler Machine Company LLC Purchase Order is the official binding contract in the order of precedence described in the Terms & Conditions of Purchase. Requirements are specified on the Purchase Order by group or specific SQAR number(s) and/or text. If conflicts between flow down documents and the Purchase Order are detected, the Supplier shall immediately notify the Thaler Machine Company LLC Buyer. Handwritten, lined-out or initialed changes to purchase orders are not allowed. Verbal and/or email authorizations are not permitted.

## Supplemental Quality Assurance Requirements

### 200. Export Requirements (ITAR, EAR, ECI, OUO, etc.)

If Supplier (or any sub tier) received technical data, manufacturing drawings, specifications, software, or similar type items from Buyer, it is the responsibility of Supplier to ensure compliance with all U.S. export laws and regulations. These laws include, but are not limited to,

- Atomic Energy Act of 1954
- Section 38 of the Arms Export Control Act as enumerated in 22 CFR Parts 120-130
- The International Traffic in Arms Regulations (ITAR)
- Export Administration Act of 1979, as amended in 15 CFR Parts 730-774 of the Export Administration Regulations (EAR)

No technical data, manufacturing drawings, specifications, software, or similar type items shall be transferred, disclosed, or exported to "Foreign Persons" without specifically obtaining approvals from the U.S. Department of State's Office of Defense Trade Controls or from the U.S. Department of Commerce's Bureau of Industry and Security, as required.

Supplier (or any sub tier) agrees to abide by all limitations and provisos and/or riders and conditions listed on any licenses or other approvals issued by the U.S. Department of State or the U.S. Department of Commerce.

In the event any Supplier (or any sub tier) is unable to comply with the U.S. export laws and regulations as listed above, the Supplier is required to reject the request for quote or PO with written explanation to applicable Buyer.

Supplier shall immediately notify Thaler Machine Company LLC Buyer if Supplier is, or becomes, listed in any Denied Parties List or if Supplier's export privileges are otherwise denied, suspended, or revoked in whole or in part by any Government entity or agency. Where Supplier is a signatory under a Company export license or export agreement (e.g., Technical Assistance Agreement, Manufacturing License Agreement), Supplier shall provide prompt notification to Thaler Machine Company LLC Buyer in the event of changed circumstances including, but not limited to, ineligibility, a violation or potential violation of the ITAR, or the initiation or existence of a U.S. Government investigation that could affect the Supplier's performance under this Contract.

If Supplier is or has been engaged in the U.S. in the business of either exporting, manufacturing, or brokering ITAR Items, Supplier represents that it is registered with the Directorate of Defense Trade Controls ("DDTC"), as may be required by 22 C.F.R. 122.1 of the ITAR and that it maintains an effective export/import compliance program in accordance with DDTC guidelines.

Suppliers must have a written procedure that describes controls for ensuring that only U.S. persons are allowed access to ECI/OUO information and items. At a minimum, the written procedure must address: Access Control, Storage, Electronic Transmission, and Destruction policies as noted below:

#### Access Control:

- ECI/OUO information and items must be maintained in a secured area to prevent inadvertent release or disclosure to foreign persons.
- Foreign persons (non-US persons), including associates, consultants, visitors, and/or sub-contractors, must be restricted from having access to ECI/OUO information and items through any means (this includes overhearing conversations, observing material or information, or otherwise obtaining access in any way).

#### Storage:

- ECI/OUO information and material must be stored in a secured area to restrict access from foreign persons.

#### Transmission:

- The Supplier is responsible for flowing down ECI/OUO requirements to their suppliers used to support Buyer's product requirements.
- ECI/OUO information must be sent through a secure method when transmitting electronically (i.e., encryption, password protection, or secure FTP site).

#### Destruction:

- ECI/OUO articles/information must be destroyed when no longer needed as appropriate for their industry as follows:
  - Manufacturers -- documents, electronic media, models, and materials (including scrap and in-process scrap) must be destroyed when no longer needed.
  - Service Providers -- documents and electronic media must be destroyed when no longer needed.
  - Distributors -- documents and electronic media must be destroyed when no longer needed.
  - Laboratories -- documents, electronic media, and test samples (less returned to the Buyer) must be destroyed when no longer needed.
- Destruction must make said items unrecognizable and must subsequently be disposed using normal waste processing

### 201. Post Award Review

Upon receipt of the Purchase Order, the Supplier shall contact the Buyer and set up a review of the Purchase Order to assess the quality requirements and other pertinent details with Thaler Machine Company LLC

## 202. Purchase Order Review

Upon receipt of the Purchase Order, the Supplier shall review the purchase order and return a signed copy of the Purchase Order to Thaler Machine Company LLC Buyer.

## 203. Business Continuity Management

The Supplier shall ensure their Company has robust Business Continuity Management (BCM) processes in place that include disaster recovery and preparedness. The Supplier shall document a Business Continuity Plan which details what the Company would do if People, Processes or Technology was to become unavailable. This Business Continuity Plan shall be applicable, including but not limited to:

- Natural disasters
- Labor disputes
- Lockouts
- Evictions
- Power or systems failures
- Hazardous spills
- Fire
- Floods
- Explosions
- Sabotage
- Riots
- War or other civil disturbances
- Voluntary or involuntary compliance with any laws, regulations, or requirements of any government authorities.

General information regarding how to develop a Business Continuity Plan can be found on the internet. Some helpful website links are listed below:

<http://www.disaster-recovery-guide.com/>

[http://www.disasterrecovery.org/disaster\\_recovery.html](http://www.disasterrecovery.org/disaster_recovery.html)

## 204. QMS Certified to AS9100

The Supplier shall maintain a Quality Management System that is certified to AS9100 (latest revisions). The Supplier must provide adequate evidence that the Quality Management System has been successfully audited by a third-party registrar. A copy of the third-party certificate shall be forwarded to the Thaler Machine Company LLC Buyer and Quality Systems Manager. In the event a new revision is published, the Supplier must become certified to the new revision within the accepted period of that standard. All acceptance equipment must prove traceable to NIST 800-171 (National Institute of Standards and Technology) latest revision. In the event the Supplier's Quality Management System loses certification, the Supplier must notify the Thaler Machine Company LLC Buyer and Quality Systems Manager within 24 hours in writing of the Supplier's plan to attain recertification.

Quality Control responsibility shall be clearly designated within the Supplier's organization. Personnel having this responsibility shall have sufficient authority to assure that quality is not compromised.

The Supplier's quality control system shall be implemented by written procedures, which adequately provide for compliance with the requirements of certification.

The Supplier shall immediately notify the Buyer in writing of any change to:

- The quality control system that may affect the inspection, conformity, or safety of the product
- Quality leadership
- Quality system status (e.g., Supplier converts to an ISO9000-based system; or Supplier no longer is registered to AS9100).
- Immediately of any location changes, name changes, and/or address changes in writing.
- Quality System Requirements (QMS)
- Supplier ID/DUNS number, (if changing, provide old DUNS and new DUNS.)
- Name, Phone number and/or email address of supplier quality contact

In addition, Calibration and Testing Services shall meet the requirements of ISO 17025 or ANSI Z540-1; Design and Inspection Services shall meet the requirements of AS9100; Auditing Services shall meet the ISO 19011.

Quality management system (QMS) processes include but not limited to processes for

- Management activities (e.g., Internal Auditing and consultants)
- Provision of resources (e.g., Hiring (Labor) and Training)
- Product realization (e.g., Design, Building/Workspace,
  - Process Equipment (both hardware and software)
  - Preventive Maintenance
  - Outgoing Transportation

- Scrap Destruction, Production and Non-Production Consumables)
- Measurement (e.g., Calibration, Inspection, Auditing and Testing Services)

## 205. QMS Certified to ISO-9001

The Supplier shall maintain a Quality Management System that is certified to ISO-9001 (latest revisions). The Supplier must provide adequate evidence that the Quality Management System has been successfully audited by a third-party registrar. A copy of the third-party certificate shall be forwarded to the Thaler Machine Company LLC Buyer and Quality Systems Manager. In the event a new revision is published, the Supplier must become certified to the new revision within the accepted period of that standard. All acceptance equipment must prove traceable to NIST 800-171 (National Institute of Standards and Technology) latest revision. In the event the Supplier's Quality Management System loses certification, the Supplier must notify the Thaler Machine Company LLC Buyer and Quality Systems Manager within 24 hours in writing of the Supplier's plan to attain recertification.

Quality Control responsibility shall be clearly designated within the Supplier's organization. Personnel having this responsibility shall have sufficient authority to assure that quality is not compromised.

The Supplier's quality control system shall be implemented by written procedures, which adequately provide for compliance with the requirements of certification.

The Supplier shall immediately notify the Buyer in writing of any change to:

- The quality control system that may affect the inspection, conformity, or safety of the product
- Quality leadership
- Quality system status (e.g., Supplier converts to an ISO9000-based system; or Supplier no longer is registered to AS9100).
- Immediately of any location changes, name changes, and/or address changes in writing.
- Quality System Requirements (QMS)
- Supplier ID/DUNS number, (if changing, provide old DUNS and new DUNS.)
- Name, Phone number and/or email address of supplier quality contact

In addition, Calibration and Testing Services shall meet the requirements of ISO 17025 or ANSI Z540-1; Design and Inspection Services shall meet the requirements of AS9100; Auditing Services shall meet the ISO 19011.

Quality management system (QMS) processes include but not limited to processes for

- Management activities (e.g., Internal Auditing and consultants)
- Provision of resources (e.g., Hiring (Labor) and Training)
- Product realization (e.g., Design, Building/Workspace,
  - Process Equipment (both hardware and software)
  - Preventive Maintenance
  - Outgoing Transportation
  - Scrap Destruction, Production and Non-Production Consumables)
  - Measurement (e.g., Calibration, Inspection, Auditing and Testing Services)

## 206. QMS Compliant to ISO-9001 or AS9100

The Supplier shall maintain a Quality Management System that is compliant to ISO-9001 or AS9100 (latest revisions). The Supplier's Quality Management System shall be subject to review and/or audit for compliance by Thaler Machine Company LLC designee. In the event a new revision is published, the Supplier must become compliant to the new revision within the accepted period of that standard. All acceptance equipment must prove traceable to NIST 800-171 (National Institute of Standards and Technology) latest revision.

Quality Control responsibility shall be clearly designated within the Supplier's organization. Personnel having this responsibility shall have sufficient authority to assure that quality is not compromised.

The Supplier's quality control system shall be implemented by written procedures, which adequately provide for compliance with the requirements of certification.

The Supplier shall immediately notify the Buyer in writing of any change to:

- The quality control system that may affect the inspection, conformity, or safety of the product
- Quality leadership
- Immediately of any location changes, name changes, and/or address changes in writing.
- Quality System Requirements (QMS)

In addition, Calibration and Testing Services shall meet the requirements of ISO 17025 or ANSI Z540-1; Design and Inspection Services shall meet the requirements of AS9100; Auditing Services shall meet the ISO 19011.

## 207. NADCAP Accreditation

The Supplier (and any sub tier) shall maintain a Nadcap Accreditation promoting a standardized approach to quality assurance and a reduction in redundant auditing. The Supplier must provide adequate evidence that the applicable process has been successfully audited by a third-party registrar. A copy of the Nadcap certificate shall be forwarded to the Thaler Machine Company LLC Buyer and Quality Systems Manager. All acceptance equipment must prove traceable to NIST 800-171 (National Institute of Standards and Technology) latest revision. In the event the Supplier's Quality Management System loses certification, the Supplier must notify the Thaler Machine Company LLC Buyer and Quality Systems Manager within 24 hours in writing of the Supplier's plan to attain recertification.

## 208. A2LA Accreditation

The Supplier (and any sub tier) shall successfully complete the A2LA evaluation process to perform tests on metals and metal components as noted on their certificate. The Supplier must provide adequate evidence that the Quality Management System has been successfully audited by a third-party registrar. A copy of the A2LA certificate shall be forwarded to the Thaler Machine Company LLC Buyer and Quality Systems Manager. All acceptance equipment must prove traceable to NIST 800-171 (National Institute of Standards and Technology) latest revision. In the event the Supplier's Quality Management System loses certification, the Supplier must notify the Thaler Machine Company LLC Buyer and Quality Systems Manager within 24 hours in writing of the Supplier's plan to attain recertification.

## 209. Approved Inspection System

The Supplier (and any sub tier) shall maintain an inspection system approved by Thaler Machine Company LLC that includes at a minimum calibration of acceptance equipment traceable to NIST 800-171 (National Institute of Standards and Technology) latest revision, material traceability, and records of inspection. The Supplier's (and any sub tier's) system shall be subject to review and/or audit for compliance by the Thaler Machine Company LLC designee.

## 210. DFARS Qualifying Country

Superseded by DFARS 225.003

Qualifying Country, defined by DFARS 225.003, means a country with a reciprocal defense procurement memorandum of understanding or international agreement with the United States in which both countries agree to remove barriers to purchases of supplies produced in the other country or services performed by sources of the other country, and the memorandum or agreement complies, where applicable, with the requirements of section 36 of the Arms Export Control Act (22 U.S.C. 2776) and with 10 U.S.C. 2457.

Refer to DFARS 225.003 for detail and the most current listing of qualifying countries.

## 211. DFARS 252.225-7008 Restriction on Acquisition of Specialty Metals

Superseded by DFARS 252.225-7008.

Any specialty metal delivered under this contract shall be melted or produced in the United States or its outlying areas.

Refer to DFARS 225.7008 for detail.

## 212. DFARS 252.225-7009 Restriction on Acquisition of Certain Articles Containing Specialty Metals

Superseded by DFARS 252.225-7009.

Any specialty metals incorporated in items delivered under this contract shall be melted or produced in the United States, its outlying areas, or a qualifying country.

This clause does not apply to:

- Electronic components
- Commercially available off-the-shelf (COTS) items, other than

- Specialty metal mill products, such as bar, billet, slab, wire, plate, or sheet, that have not been incorporated into COTS end items, subsystems, assemblies, or components.
- Forgings or castings of specialty metals, unless the forgings or castings are incorporated into COTS end items, subsystems, or assemblies.
- Commercially available high-performance magnets that contain specialty metal, unless such high-performance magnets are incorporated into COTS end items or subsystems; and
- COTS fasteners, unless—
  - The fasteners are incorporated into COTS end items, subsystems, assemblies, or components; or
  - The fasteners qualify for the commercial item exception in paragraph (c)(3) of this clause.
- Fasteners that are commercial items, if the manufacturer of the fasteners certifies it will purchase, during the relevant calendar year, an amount of domestically melted or produced specialty metal, in the required form, for use in the production of fasteners for sale to the Department of Defense and other customers, that is not less than 50 percent of the total amount of the specialty metal that it will purchase to carry out the production of such fasteners for all customers.
- Items manufactured in a qualifying country.
- Specialty metals for which the Government has determined in accordance with DFARS 225.7003-3 that specialty metal melted or produced in the United States, its outlying areas, or a qualifying country cannot be acquired as and when needed in -
  - A satisfactory quality.
  - A sufficient quantity.
  - The required form.
- End items containing a minimal amount of otherwise noncompliant specialty metals if the total weight of such noncompliant metals does not exceed 2 percent of the total weight of all specialty metals in the end item, as estimated in good faith by the Contractor. This exception does not apply to high performance magnets containing specialty metals.

Refer to DFARS 225.7009 for detail.

## 213. DFARS 252.204-7012, Safeguarding Covered Defense Information & Cyber Incident Reporting.

The Supplier (and any sub tier) shall maintain a cyber system Safeguarding Covered Defense Information and Cyber Incident Reporting as directed in DFARS 252.204-7012 latest revision.

## 214. Baseline-Process Freeze

Supplier shall freeze the process and provide data / test records with inspection tooling ID numbers as specified. A “Baseline Freeze” means a Supplier shall not change any material (cleaning, lubricating, etc.), part, process, manufacturing procedure or sequence, tooling, inspection/test methodology inspection tools or equipment, subcontractor, or location of processing/manufacture including subcontracted processors without prior notification and approval by Thaler Machine Company LLC.

## 215. Production Readiness Review

A Readiness Review is to be performed at key operations (determined by Thaler Machine Company LLC and the Supplier) if

- Starting a new production run or
- A lapse in production exceeds two years

This may include a documentation review and/or process witness

## 216. Certification of Conformance (CofC) - Supplier

The Supplier is responsible for compliance with all certification requirements referenced through the Purchase Order and for the maintenance of quality control records evidencing compliance with such requirements, regardless of whether work was performed by the Supplier or any sub tier suppliers. The Supplier shall make available, to the Thaler Machine Company LLC’s Quality Assurance Representative, evidence of this certification upon request or audit. Documents and data shall be available for Thaler Machine Company LLC, Thaler Machine Company LLC’s customer and/or Government review.

The Supplier (and any sub tier) shall provide a CofC certifying that the items on the Purchase Order comply with all requirements of the Purchase Order, including all imposed drawings and specifications. The CofC shall include the following at a minimum:

- a. Name, address, and phone number of Supplier
- b. Applicable Specification with revisions and any applicable subcategory such as Type, Class, etc.
- c. Purchase Order Number with Change Order identification
- d. Part Number



- e. Line Item(s)
- f. Drawing with Revision
- g. Part Description
- h. Quantity
- i. Lot number(s)
- j. Serial Number(s) if applicable
- k. Waivers or Deviations if applicable
- l. Certificate of Compliance Statement
- m. Authorized Signature

The Certificate of Conformance shall provide a link (via the Supplier's internal job number, work order number, or other identifier) to all documentation for this product. The Certificate must include the manufacturer's certification or complete traceability from the original authorized manufacturer for the product(s) shipped.

## 217. Furnace Charts Required

Furnace charts with all required parameters (Temperature, Start Time, End Time, Duration, return to ambient temperature method, etc.) recorded shall accompany Certificate of Conformance. Furnace charts must include a link to the Certificate of Conformance (such as lot number, Shop Order Number, Supplier's internal job number, or other direct connection). If the production lot is not heat treated as a single lot, each "heat treat lot" shall be considered a separate manufacturing lot and given a unique lot number for traceability. (Example – Lot 34567 Batch 1, Lot 34567 Batch 2, ...). Each page of Furnace Charts to be signed by operator(s) performing the operation.

A Heat Treat Lot consists of a homogeneous heat treatment batch shall not exceed one mill-run of steel. One homogeneous heat treat batch is described by those parts heat-treated by the same heat-treating equipment, at the same temperature, at the same time.

## 218. Raw Material Certification or Test Report (Metals, Chemicals, Polymers, etc.)

The Supplier is responsible for compliance with all certification requirements referenced through the Purchase Order and for the maintenance of quality control records evidencing compliance with such requirements, regardless of whether work was performed by the Supplier or any sub tier suppliers. The Supplier shall make available, to the Thaler Machine Company LLC's Quality Assurance Representative, evidence of this certification upon request or audit. Documents and data shall be available for Thaler Machine Company LLC, Thaler Machine Company LLC's customer and/or Government review.

The Supplier shall submit a raw material certification or test report for each raw material procured and/or utilized to manufacture the items on the Purchase Order. The certification or report shall list actual values, a range of values of chemical analysis or physical testing required by specification. The certification or report shall include the following at a minimum:

- a. Name, address, and phone number of Supplier
- b. Applicable Specification with revisions and any applicable subcategory such as Type, Class, etc.
- c. Purchase Order Number with Change Order identification
- d. Product Description
  - a. Heat Number or equivalent
  - b. Melt, Lot, or Batch number
  - c. Data
  - d. Specifications
  - e. Country of Origin of manufacture
  - f. Quantity
  - g. Lot number(s)
  - h. Identification of any smelter supplying tantalum, tungsten, tin, or gold (3TG) to the supply chain
  - i. Applicable Waivers or Deviations
  - j. Certificate of Compliance Statement
- k. Authorized Signature of responsible representative of the Supplier, Organization, or Laboratory performing the testing

If the testing is not performed by the Raw Material Supplier, the name and address of the company, agency, or organization doing the actual testing shall be included on the certification packet, along with all identification provided by the testing organization (Lab Accreditation, Scope, etc.).

## 219. Single Lot of Material

The full quantity of each part number provided under this purchase order/contract must have a single heat lot code.

Supplier will obtain the written approval of Thaler Machine Company LLC authorized purchasing representative prior to shipping goods that do not meet this single heat lot requirement. In the event Thaler Machine Company LLC provides authorization in writing to ship mixed heat lots, the Supplier shall provide a copy of the Thaler Machine Company LLC written authorization with the shipping document. When mixed heat lots are authorized, the shipping paperwork shall list individual heat lots and quantity.

Multiple lot/date codes shall be segregated. In addition, the individual part containers shall be marked with the quantity and heat lot.

## 220. Chemical Test (Actuals)

Each shipment shall be accompanied by a legible copy of actual test results for the following: Chemical Test (Actuals). Reported results must be identifiable with test parameters, test methods, specifications, and material(s) to product(s) delivered. Reports must bear the date and signature of a responsible representative of the agency performing the test(s) along with traceability to the Thaler Machine Company LLC Purchase Order Number. The specifications must be listed, including the revision letter(s) or revision number(s) and amendments. When parts are serialized, serial numbers must appear on the report(s).

## 221. Physical Test (Actuals)

Each shipment shall be accompanied by a legible copy of actual test results for the following: Physical Test (Actuals). Reported results must be identifiable with test parameters, test methods, specifications, and material(s) to product(s) delivered. Reports must bear the date and signature of a responsible representative of the agency performing the test(s) along with traceability to the Thaler Machine Company LLC Purchase Order Number. The specifications must be listed, including the revision letter(s) or revision number(s) and amendments. When parts are serialized, serial numbers must appear on the report(s).

## 222. Functional Test

Each shipment shall be accompanied by a legible copy of actual test results for the Functional Test. Reported results must be identifiable with test parameters, specifications, and material(s) to product(s) delivered. Reports must bear the date and signature of a responsible representative of the agency performing the test(s). The specifications must be listed, including the revision letter(s) or revision number(s). When parts are serialized, serial numbers must appear on the report(s).

## 223. Pressure or Leak Test

Each shipment shall be accompanied by a legible copy of actual test results for the Pressure or Leak Test. Reported results must be identifiable with test parameters, specifications, and material(s) to product(s) delivered. Reports must bear the date and signature of a responsible representative of the agency performing the test(s). The specifications must be listed, including the revision letter(s) or revision number(s). When parts are serialized, serial numbers must appear on the report(s).

## 224. Nondestructive Test

Each shipment shall be accompanied by a legible copy of actual test results for Nondestructive Test. Reported results must be identifiable with test parameters, specifications, and material(s) to product(s) delivered. Reports must bear the date and signature of a responsible representative of the agency performing the test(s). The specifications must be listed, including the revision letter(s) or revision number(s). When parts are serialized, serial numbers must appear on the report(s).

## 225. Process Sample Evaluation Test

Supplier shall perform the required Process Sample Evaluation Test and return the evaluation samples with the shipment. Process samples (i.e., braze, plating, coating, heat treat, or bend samples) must be adequately identified for traceability. If directed in Work Instructions or PO, the supplier shall also provide a written test result.

## 226. Destructive Physical Analysis Test

Each shipment shall be accompanied by a legible copy of actual test results for Destructive Physical Analysis Test. Reported results must be identifiable with test parameters, specifications, and material(s) to product(s) delivered. Reports must bear the date and signature of a responsible representative of the agency performing the test(s). The specifications must be listed, including the revision letter(s) or revision number(s). When parts are serialized, serial numbers must appear on the report(s).

## 227. Dual Testing

Two independent inspections by different NAS-410 certified operators with both operators signing the certification. Certificate must include the NAS-410 with qualifying level credentials of both operators or include the NAS-410 qualifying training record with level for both operators.

## 228. Dual Inspection

Two independent inspections by different inspectors with both inspectors signing the certification and/or inspection report.

## 229. 100% Inspection Required

The Supplier shall provide 100% inspection data of all features shown on drawings, specification documents, or contained in the Purchase Order for 100% of the items supplied under the Purchase Order. This shall include all applicable notes shown on the drawing. The Supplier shall identify each item individually so that the item can be traced to the inspection data. Where 100% inspection is inappropriate (i.e., destructive testing, plating compliance, painting, etc.) the Supplier shall coordinate with the Buyer the means utilized to provide the required test/inspection data such as using surrogate items (coupons) in lieu of the actual item.

## 230. 200% Critical Safety Inspection

All Safety Critical Characteristics shall be independently measured, with data recorded, by two separate means and/or individuals, and/or at two significantly different times (e.g., in-process and final). This constitutes 200% inspection.

## 231. Designated Sub Tier

Must utilize only the sub tier designated on the purchase order. Certificate must be included from the specified supplier.

## 232. Witness Samples

Witness samples of applicable testing must accompany the shipment. Samples must be identified with lot number and sample number.

## 233. Additional Witness Samples

Additional witness sample(s) material shall be included with each process lot to verify additional tests. If the production lot is not processed as a single lot, each "process lot" shall be considered a separate manufacturing lot and given a unique lot number for traceability. (Example – Lot 34567 Batch 1, Lot 34567 Batch 2, ...). If the PO does not designate the number of additional witness samples to be included, contact the Thaler Machine Company LLC Buyer for quantity.

## 234. Witness Sample Data

Witness sample data of applicable testing must accompany the shipment. Sample data must include corresponding lot number and sample number.

## 235. Additional Testing Requirements Involved

Requirements of designated specification to be conducted with additional or reduced requirements as itemized on PO. All additional or reduced requirements must be recorded itemized on certification.

## 236. Product Identification and Traceability

The Supplier shall maintain documented procedures for identification of product from receipt and during all processes of production and delivery. When traceability is a specified requirement, the Supplier shall establish and maintain documented procedures for unique identification of individual product or batches; this identification shall be recorded.

## 237. Chain of Custody

The Supplier shall provide traceable path of any entity touching the product from the time the material was created until reaching Thaler Machine Company LLC with certifications from each entity including special processors in the supply chain.

## 238. Cage with lot number

This code requires that the Supplier identify items by Commercial and Government Entity (CAGE) code and lot number. The (CAGE) code and all lot/date code numbers shall be documented on the packing sheet for each purchase order/contract line item.

When quantities comprise items from more than one lot/date code, each lot/date code must be separately package at the unit packing level to avoid lot/date code co-mingling.

EXAMPLE:                      CAGE No.              Lot No.  
   12613                      37114

## 239. Item Serialization

Thaler Machine Company LLC typically will provide serial numbers. When not specified, the Supplier (or any sub tier) shall identify each item shipped by serial number. The shipping documents and any required inspection reports shall show serial number of items in each shipment. Serial numbers assigned shall be at the Supplier's option unless otherwise specified on the Purchase Order but must be unique and non-repeating. Marking method must be approved by Thaler Machine Company LLC Buyer prior to marking. All goods, including spares, test units, etc., with a single basic family number will be assigned sequential numbers regardless of configuration (dash numbers). Serial numbers shall not be duplicated and shall provide full traceability to all material, fabrication, assembly, inspection, and test documentation. The packing slip shall show a list of all serial numbers included in the shipment.

## 240. Lot Control and Traceability – Raw Materials

The Supplier (and any sub tier) shall provide a traceability matrix of raw materials used to manufacture the items covered by the Purchase Order. This may be provided as an Excel document or within the CofC from the Supplier. The traceability matrix must contain the following at a minimum:

- a. Part Number
- b. Part Number Revision Level
- c. Supplier Assigned Lot number
- d. Quantity
- e. Serial Numbers, if applicable. Numbers assigned shall be at the Supplier's option unless otherwise specified on the Purchase Order but must be unique and non-repeating.
- f. Raw Material Manufacturer and/or Distributor
- g. Raw Material Heat, Melt or Lot Number

## 241. Lot Control and Traceability – Commercial Off The Shelf (COTS), Customer Furnished Materials (CFM) Items

The Supplier (and any sub tier) shall provide a traceability matrix of items consumed and/or assembled to complete the part listed on the Purchase Order. This may be provided as an Excel document or within the CofC from the Supplier. The traceability matrix must contain the following at a minimum:

- a. Part Number
- b. Part Number Revision Level
- c. Supplier Assigned Lot number
- d. Distributor and/or Manufacturer
- e. Lot or Batch Number. Numbers assigned shall be at the Supplier's option unless otherwise specified on the Purchase Order but must be unique and non-repeating.
- f. Expiration Date as applicable

## 242. Calibration Report

The Supplier (and any sub tier) shall provide a certified calibration report for each instrument utilized to determine the acceptance/rejection of parts. The report shall identify NIST traceable standards and show actual values measured. Typically, required at First Article Inspection, inspection reports or provided upon request.

## 243. Calibration Certification

The calibration supplier listed on the purchase order shall perform all calibrations and is not authorized to subcontract any calibration unless approved by Thaler Machine Company LLC. A calibration report shall be furnished to Thaler Machine Company LLC for each calibration performed and at a minimum include the following information:

- Identification of the unit being calibrated
- Identification of the calibration source traceable to NIST
- Date of calibration

- Conditions "As Found" and "As Left"
- Notification of out-of-tolerance conditions
- Certification that calibrations were performed in accordance with either ANSI/NCSL Z540, ISO 10012 or ISO/IEC 17025 (latest revisions).
- Identification of measurement uncertainties

## 244. Source Inspection Required

The items supplied by the Supplier under the Purchase Order are subject to Source Inspection by Thaler Machine Company LLC designated representative. The Supplier shall notify the Buyer or other designated representative at least 5 business days prior to the expected source inspection. The Supplier may not ship any items without authorization signed by the Buyer or other designated representative, and it must be included with the shipment. The Supplier must have available, at the time of presentation a complete Source Inspection package. At a minimum the Source Inspection package must include the following as applicable:

- a. Shipping pack list
- b. Ballooned drawing with numbering scheme matching the inspection report
- c. Inspection data
- d. CofC from the Supplier
- e. CofC for COTS
- f. Raw Material Certification
- g. CofC for special processes
- h. Traceability matrices
- i. As-Built Record/Log
- j. Documentation Control List indicating the processes utilized to manufacture and inspect parts
- k. Any approved deviations and/or waivers (if applicable)
- l. Other documents as required by the PO

The Supplier shall provide designated representative with reasonable facilities and equipment and free access to all areas and records essential to the proper conduct of source inspection of the procured items. The performance of a source inspection, whether on-site or not, does not relieve the Supplier of any responsibility for the determination of conformance of the items to the contracted requirements.

## 245. Source Surveillance Required

The items supplied by the Supplier under the Purchase Order are subject to Source Surveillance by the Thaler Machine Company LLC Buyer or another designated representative. The Supplier shall notify the Buyer or other designated representative prior to the commencement of manufacturing with enough advance notice so that the Buyer or other designated representative may make arrangements to conduct on-site surveillance of the Supplier's Quality Management System, procedures, records, procurement documents, facilities, and manufacturing processes, and in-process and final inspection/test to verify that the requirements of the Purchase Order are being satisfied if so elected.

The Supplier shall provide the Buyer or other designated representative with reasonable facilities and equipment, and free access to all areas and records, essential to the proper conduct of (as applicable) design, development, manufacture, inspection, testing, and packaging and shipping of the procured items.

The Buyer or other designated representative may specify mandatory in-process source inspection hold points. If such are required, the Supplier shall provide the Buyer or other designated representative with notification at least 7 business days in advance to allow the Buyer or other designated representative to schedule the required inspections.

## 246. Government Source Surveillance

During performance of the Purchase Order, the Supplier's (and any sub tier's) Quality Management System, Inspection System, and Manufacturing Processes are subject to review, analysis, and verification by authorized Government representatives and/or other Thaler Machine Company LLC customers when approved by Thaler Machine Company LLC.

Government mandatory product inspections, process buy-offs, release of product prior to shipment, or final inspections are not required, but may be imposed, when deemed necessary by the Government representative or when directed by the delegating authority.

Government surveillance does not constitute product acceptance or certification of systems or processes by either the Thaler Machine Company LLC Buyer or Government and does not relieve the Supplier of any Purchase Order requirements.

## 247. FAA Surveillance

Materials and/or components supplied under the terms of this Purchase Order may be utilized in equipment which has been or will be subject to Federal Aviation Administration type certification or Technical Standard Order Authorization/Parts Manufacturer Approval. Supplier's facility and quality system are subject to surveillance by authorized representatives of the Federal Aviation Administration. The Supplier shall provide all reasonable facilities and assistance to the authorized FAA representatives, upon request.

## 248. Control Plan/Locked Process

The Supplier (and any sub tier) shall prepare a control plan for the items to be delivered under the Purchase Order. The control plan shall be submitted to the Thaler Machine Company LLC Buyer for approval prior to FAI. The plan shall include at a minimum:

- a. Part Number and Name
- b. Drawing Number with Revision
- c. Process Name/Operation Description
- d. Characteristics/Features to be inspected or tested
- e. Character class (Major, Minor, Critical, Special, Key)
- f. Specification with tolerance
- g. Evaluation/Measurement Technique
- h. Sample size and frequency
- i. Control Method (X-MR, Xbar & R, Set-up Sheet, Check Sheet, Lab Report, Record Sheet, Traveler, etc.)

The control plan shall contain all inspection/test points throughout the entire manufacturing process. The Supplier (and any sub tier) shall only utilize what has been defined in the plan and any changes to the approved plan shall require approval, by the Thaler Machine Company LLC Buyer, prior to implementation.

## 249. Drawing and Change Control

The Supplier shall make no drawing or changes. As Thaler Machine Company LLC is typically a make to order entity, approval from Thaler Machine Company LLC's customer is also typically required.

The Supplier's change control system shall assure that the latest applicable drawings, specifications, technical requirements, Purchase Order information and changes thereto will be available at the time and place of Supplier's acceptance of material and/or services. All changes shall be processed in a manner, which will assure incorporation on the affected material and/or services at specified effectivity points.

## 250. Process Procedures and Documentation

The Supplier (and any sub tier) shall fully document the processes utilized to manufacture, produce, and/or assemble the items supplied under the Purchase Order. The documentation shall be created in the Supplier's format and shall be made available to the Buyer as part of the FAI Data Package and source/certification package. If Supplier's process is Proprietary, a Document Control List is to be provided that includes the Document ID, Document Title, and Revision. This can be a separate document or as part of the CofC.

The Supplier (and any sub tier) shall maintain the documentation under configuration control using revision levels to ensure that the correct version of the documented procedure is being used.

The Supplier (or any sub tier) shall not incorporate any changes to the controlled documentation (except those changes for grammatical errors, typographical errors, etc.) without prior submission and subsequent approval in writing from the Buyer.

Additionally, the Supplier (and any sub tier) shall exercise sufficient control of item specific software programs for the items supplied under the Purchase Order in a manner to ensure that the correct version is used for manufacture. This includes machine programs/recipes and CMM programs. This applies to only the programmable portion of but does not include the parent software package.

## 251. Inspection, Test and Acceptance

The supplier must perform inspections and tests to validate the Buyer's Purchase Order and associated drawing and specification requirements are met as follows:

- Inspection and testing of specified items, services, and processes must be conducted under controlled conditions using established acceptance and performance criteria.
- Sampling plans prescribe random sampling and afford a sound statistical basis to ensure product quality.
- Inspection and test requirements and results must be documented.
- Equipment used for inspections and tests must be calibrated and maintained.
- Independent qualified persons, other than those who perform or directly supervise the work being inspected or tested, must perform acceptance inspections and tests verifying the product conformance to Purchase Order and design criteria.
- When the Buyer proposes to Accept Product based upon the Supplier's Data. The Supplier must have an established process for maintaining the traceability between the product and the measuring and test equipment used for product acceptance.

## 252. Inspection Report

The Supplier shall submit an inspection report in the Supplier's format with the following information as a minimum:

- a. Part Number, Revision Level
- b. Part Name
- c. Purchase Order Number with Change Order
- d. Lot Number(s) (with Split Lot suffix if applicable)
- e. Lot Quantity(s)
- f. Inspection Sample Size (AQL or 100%)
- g. Characteristics/parameters inspected and/or tested
- h. Character class (Major, Minor, Critical, Special, Key, etc.)
- i. Measurement Method with tool ID
- j. Calibration Due Date
- k. Inspection/test Data with actual values where possible
- l. Quantity Accepted/Rejected
- m. Waivers or Deviations
- n. Date of Inspection/test
- o. Operator and/or Inspector Responsible
- p. First Article Inspection/Lot Acceptance/Source or any combination of these

All items inspected shall be identified/marked (serial number) to be traceable to the inspection report data. Data must be provided in units of measure (U.S. Customary or Metric) used on the drawing, unless otherwise noted on the P.O.

The level of accuracy shall be of a ratio of at least 10 to 1 greater than the tolerance of the characteristic to be measured.

## 253. Inspection Report – Thaler Machine Company LLC Format

The Supplier shall submit with each shipment a report in Thaler Machine Company LLC format (supplied by the Buyer). The Supplier shall address each item called out and provide inspection/test data with actual values where possible. If Go/No-Go test methods are utilized, the gage or set-up must be identified. All items inspected shall be identified/marked (serial number, if available) to be traceable to the inspection report data. If items were inspected using a sampling plan, the marked samples shall be segregated from the balance of the lot. An explanation of the disposition of any items/characteristics showing nonconformance/rejection on the reports shall be included with the report. Data is to be provided in units of measure (U.S. Customary or Metric) used on the drawing, unless otherwise noted on the PO. Conditional formatting may be required (Excel).

## 254. First Article Inspection Required/Maintained – AS9102 Required

The items to be delivered under the Purchase Order are subject to First Article Inspection (FAI) and must be IAW AS9102 (latest version). The FAI is performed on one part (unless directed by the PO) that is representative of the first production run. The FAI unit shall not be inspected or processed differently. The Supplier shall perform 100% inspection of all features and notes shown on the drawing to include specifications as appropriate. The only exception shall be for inspection/tests contained in material specifications provided that the required inspection and tests have been performed and certified results are submitted with the First Article Data Package. BASIC and references dimensions are not required unless directed by the PO. The Thaler Machine Company LLC Buyer is responsible for call out of BASIC and/or reference dimensions on the PO if required.

A new, or updated (delta), First Article shall be required if any of the following events occur:

- a. Interruption of Production greater than 1 year

- b. Change to Facility or Processing Equipment
- c. Change to Procedures
- d. Change in Location
- e. Change in Source or Processing
- f. Change in Design or Baseline
- g. Replacement of Special Tooling (i.e., Injection molds)

The First Article Data Package shall contain the following at a minimum:

- a. First article item
- b. Balloon Drawing
- c. Inspection Data
- d. Material Certifications
- e. Special Process Certifications
- f. Any applicable approved deviations, waiver and/or variances
- g. Any other documentation specified on the PO or specification(s)

If the First Article or the First Article Data Package is disapproved for nonconformance to requirements, the Supplier shall, upon the Buyer's request, repeat any or all First Article inspections or tests. Prior to such additional inspections or tests, the Supplier shall make any necessary changes, modifications, or repairs to the First Article. All costs related to any additional inspections or tests following disapproval shall be borne by the Supplier. The Thaler Machine Company LLC Buyer, at his/her discretion, may elect to have the Supplier bear the costs of any additional travel, labor, delivery schedule extensions, and material expenses resulting from the disapproval of the First Article or First Article Data Package. After conducting the additional inspections or tests, the Supplier shall notify the Buyer as to the expected date for resubmission of the First Article and First Article Data Package. The Supplier shall have the First Article and the First Article Data Package ready for presentation by the agreed extended date. No change of delivery dates is to be assumed based on a change in the completion date of the first article.

Unless otherwise specified in the Purchase Order, and if the approved First Article is not consumed or destroyed due to testing, the Supplier may deliver the item as part of the Purchase Order quantity provided it meets all requirements for acceptance.

FAI establishes the baseline and locks down the entire process (procedures/work instructions, control plans, manufacturing and inspection recipes/programs, facility).

## 255. First Article Inspection Plan Required

The Supplier shall prepare a First Article Inspection (FAI) plan for the items to be delivered under the Purchase Order. A copy of the plan shall be submitted to the Thaler Machine Company LLC Buyer for approval within thirty (30) days after purchase order award. The FAI plan shall include as a minimum:

- a. Identification of Item(s)
- b. First Article Schedule (dates, location, etc.)
- c. Inspection/Test to be performed (if not specified by Thaler Machine Company LLC)
- d. Accreditation documents for independent 3<sup>rd</sup> party laboratories performing NDT.
- e. Characteristics/Features to be inspected or tested (if not specified by Thaler Machine Company LLC)
- f. Method of Inspection (visual, test equipment, gage, etc.)
- g. Measuring or Test Equipment to be used

First Article Inspection is required on one part (unless directed by the PO) that is representative of the first production lot. Inspection methods shall be production intent.

## 256. First Article Inspection Plan

The sole purpose of an advance review of the FAI Plan is to confirm the supplier will measure all applicable part characteristics per specifications.

## 257. As-Built Record or Log

The Supplier shall prepare an As-Built Record/Log for the items to be delivered under the Purchase Order. A copy of the format shall be submitted to the Thaler Machine Company LLC Buyer within 30 days after purchase order award. At a minimum the matrix must identify all component part numbers, revision levels, lot numbers and/or serial numbers for each final assembly, waivers/deviations; Excel preferred. The matrix shall be supplied with each source data package.



## 258. Supplying Controlled Shelf-Life Material

The Supplier (and any sub tier) shall have and maintain an effective system for controlling items that have limited acceptability due to shelf-life constraints and provide for the rotation of stock (FIFO). The Supplier shall show on each container of materials having a limited or specified shelf life (both the Supplier's in-house containers and containers used for delivery to the Buyer) the cure, manufacture or start of life control date, expiration date, lot number, and any special storage and handling conditions applicable. This information shall be in addition to the normal identification requirements of name, part or code number, specification number, type, size, quantity, etc. Special handling requirements shall be recorded on any certifications and shipping documents covering the material as delivered to the Buyer. Time lapse between date of scheduled delivery to the Buyer and expiration date shall not exceed one third of the shelf life for the material without written approval of the Buyer prior to shipment.

## 259. Material Safety Data Sheet (MSDS or SDS)

A copy of the Material Safety Data Sheet (per ANSI Z400.1-2004) is to be provided to the Thaler Machine Company LLC Buyer upon receipt of the order. The Supplier shall provide a copy of the MSDS or SDS prior to or with the shipment of the product at the latest. A link to a website containing the MSDS or SDS is acceptable but must be listed on the shipping pack list. US Hazardous Materials Identification System (HMIS) information to be included

## 260. Process Flow and PFMEA Required and Maintained

The Supplier shall submit a Process Flow and Process Failure Mode and Effects Analysis (PFMEA) in the Supplier's format for the items to be delivered under the Purchase Order. The Process Flow and PFMEA shall be submitted to the Thaler Machine Company LLC Buyer for approval prior to FAI.

## 261. Raw Material Approval Prior to Manufacturing of Product

The Supplier shall submit ALL raw material certification(s), test report(s), or CofC(s) for each material utilized to manufacture product on the Purchase Order to the Thaler Machine Company LLC Buyer prior to using the material. The Thaler Machine Company LLC Buyer will provide an approval via email to the Supplier indicating the Supplier may proceed with manufacturing. Supplier shall provide the approval email in their source data package.

## 262. 3rd Party Independent Inspection/Testing

The Supplier shall use only sub-tier suppliers specifically listed on the PO or recorded on the approved supplier list for the Thaler Machine Company LLC customer and/or end customer listed on the PO. Contact the Thaler Machine Company LLC Buyer with any questions.

## 263. Control of 3rd Party Independent Inspection/Testing

The Supplier shall use only accredited laboratories with a scope of accreditation allowing the performance of such testing/inspection. Prior to the performance of any testing (or inspection) to be performed by an outside laboratory the Supplier shall submit to the Buyer the name of the laboratory, the laboratory's certificate of accreditation, and the laboratory's scope of accreditation for approval. Accredited Certification Bodies recognized by Thaler Machine Company LLC are, but may not be limited to, A2LA (American Association of Laboratory Accreditation) and NADCAP (National Aerospace and Defense Contractors Accreditation Program). Use of a laboratory not accredited by either A2LA or NADCAP shall require approval of the Buyer prior to use.

Copies of the test/inspection report shall be provided to the Buyer, test/inspection reports shall include the specification (Drawing with Revision for items receiving dimensional inspection) that was applied, the individual requirements, actual measured results, and a Pass/Fail conclusion. The report must be signed by the testing/inspection facility. If the required NDT is for radiography, an adequate method of identifying and cross-referencing each x-ray film exposure shall be provided in report form. When parts are serialized, the serial numbers must appear on the report (and film if for x-ray) with the control number. NDT records shall be submitted with each shipment to the Buyer and shall include x-ray film when required by the Purchase Order.

## 264. Control of Special Processes and Certification

The Supplier shall not perform, or subcontract to perform any "Special Processes" without written approval from the Buyer. Special Processes are defined as a method controlled by a contractually required specification where:

- When a product undergoes a physical, chemical, or metallurgical transformation or inspection, conformance to the specification cannot be readily verified by normal inspection methods

- or -

- The quality of the product depends on use of specific equipment operated in a specific manner, under controlled conditions, by trained personnel with instructions, procedures, and standards.

Special Processes that require certification are radiography (x-ray), magnetic particle, heat treating, plating, anodizing, chemical conversion coating (chem film), passivation, abrasive blasting, oxide coating, painting, nitriding, case hardening, casting, forging, welding, brazing, soldering and others as may be specified.

The Supplier, or their subcontractor, must be certified to perform the specified Special Process through an Accredited Certification Body, A2LA, NADCAP, or specific Thaler Machine Company LLC Customer. The Supplier shall contact the Thaler Machine Company LLC Buyer for a specific listing of Special Processes that are approved for use (during the RFQ process).

Inspection may also be included as a Special Process if the Supplier does not have the in-house capability, or resources, to perform inspections as specified on the Purchase Order. If the Supplier is required to use subcontracted inspection, the use of any subcontracted inspection must be approved by the Buyer with enough advanced notice to not delay the delivery schedule shown on the Purchase Order.

A Certificate of Conformance (CofC) is required to be submitted during source inspection and FAI, and it must meet the requirements detailed in the specification for that special process.

## 265. Inspection Equipment – Supplier Furnished

The Supplier (and any sub tier) shall provide and maintain all acceptance inspection equipment necessary to assure conformance of items to the requirements of the Purchase Order. The Supplier shall perform inspection and/or test on end items covered by the Purchase Order prior to submission to Buyer or prior to delivery. Inspection/test of material, which cannot be readily examined in the end items, must be performed at the appropriate in-process stages of manufacturing. All such equipment and records shall be subject to review by the Buyer (and possibly the Government) and shall be available for use at the time of First Article submission, or on-site Source Inspections. The Supplier shall maintain the acceptance inspection equipment within a controlled calibration system that requires established intervals (5-year maximum) for calibration against certified standards traceable to the National Institute of Standards and Technology (NIST).

Any special inspection equipment designed and procured must be validated prior to use. This is typically completed by performing a modified Gage Repeatability & Reproducibility Study (Gage R&R) or some other validation plan that meets the usage.

The environment of the calibration areas shall be controlled to the extent necessary to assure measurements of the required accuracy. All calibrated items shall be transported, stored, used, and calibrated in an environment controlled to the extent necessary to assure the calibration integrity.

Supplier must have a written description of their standards and calibration program.

Calibration procedures must be controlled, available, used, and must contain sufficient detail to ensure calibrations are performed properly. Procedures that are obtained from a U.S. Government agency, an equipment manufacturer, or a published standard may be used if none are furnished by the Buyer.

Personnel performing calibrations must be trained and technically qualified for the assigned tasks. Records of qualifications must be maintained for all calibration personnel.

Selection of M&TE/standards must be based on the measurement type, range and accuracy required to determine conformance to requirements containing acceptance parameters and/or tolerances. The accuracy of acceptance equipment shall be of a ratio of at least 10 to 1 greater than the tolerance of the characteristic or feature to be measured unless directed by the PO. The calibration method and frequency of calibration for M&TE/standards must be defined, based on the type of equipment, stability characteristics, accuracy, intended use, and other conditions affecting capability.

When measurement standards or M&TE are either removed from service, removed from periodic calibration, or placed in storage, and they have been used since their last calibration, a final calibration (cross-check/loop closure) must be performed. In the event that measurement M&TE/standards are found out-of-tolerance (OOT) during recalibration or loop closure the Supplier must perform an evaluation of impact to the Buyer's product/data and provide notification to the Buyer in writing if there is an impact to the Buyer's product/data.

For lost or damaged equipment, the Supplier must notify the Buyer in writing of the lost or damaged equipment and the potential impact to the Buyer's product/data.

## 266. Inspection Equipment – Buyer Designated

The Supplier (and any sub tier) shall only use the equipment (or designs) mandated by the Purchase Order for the designated characteristics specified on the Purchase Order. The Supplier shall perform inspection and/or test on end items covered by the Purchase Order prior to submission to Buyer or prior to delivery. Inspection/test of material, which cannot be readily examined in the end items, must be performed at the appropriate in-process stages of manufacturing. Records of inspection/tests must be maintained by the Supplier. All such equipment shall be subject to review by the Buyer (and possibly the Government) and shall be available for use at the time of First Article submission, or on-site Source Inspections. The Supplier shall maintain the acceptance inspection equipment within a controlled calibration system that requires established intervals for calibration against certified standards traceable to the National Institute of Standards and Technology (NIST). The accuracy of acceptance equipment shall be of a ratio of at least 10 to 1 greater than the tolerance of the characteristic or feature to be measured unless directed by the PO.

Any special inspection equipment designed and procured must be validated prior to use. This is typically completed by performing a modified Gage Repeatability & Reproducibility Study (Gage R&R) or some other validation plan that meets the usage.

The environment of the calibration areas shall be controlled to the extent necessary to assure measurements of the required accuracy. All calibrated items shall be transported, stored, used, and calibrated in an environment controlled to the extent necessary to assure the calibration integrity.

Personnel performing calibrations must be trained and technically qualified for the assigned tasks. Records of qualifications must be maintained for all calibration personnel.

Selection of M&TE/standards must be based on the measurement type, range and accuracy required to determine conformance to requirements containing acceptance parameters and/or tolerances. The accuracy of acceptance equipment shall be of a ratio of at least 10 to 1 greater than the tolerance of the characteristic or feature to be measured unless directed by the PO. The calibration method and frequency of calibration for M&TE/standards must be defined, based on the type of equipment, stability characteristics, accuracy, intended use, and other conditions affecting capability.

When measurement standards or M&TE are either removed from service, removed from periodic calibration, or placed in storage, and they have been used since their last calibration, a final calibration (cross-check/loop closure) must be performed. In the event that measurement M&TE/standards are found out-of-tolerance (OOT) during recalibration or loop closure the Supplier must perform an evaluation of impact to the Buyer's product/data and provide notification to the Buyer in writing if there is an impact to the Buyer's product/data.

For lost or damaged equipment, the Supplier must notify the Buyer in writing of the lost or damaged equipment and the potential impact to the Buyer's product/data.

## 267. Safety Critical Characteristic Calibration Period and No Due Date Extension

All Measuring and Test equipment used to verify Safety Critical Characteristics shall have a calibration period no longer than 1 year and no extensions shall be granted.

## 268. Statistical Process Control / Capability Analysis

The Supplier is required to validate the quality of their product, whether produced at the Supplier's facility or at a subcontracted facility, using Statistical Process Control (SPC) techniques as defined within ISO 11462 (current revision). Application of SPC techniques shall be considered for characteristics identified as Key, Critical, Major, and Special on the drawing or other document. The Supplier shall provide written justification for all such characteristics where SPC is determined to be inappropriate.

A plan for the implementation of SPC shall be submitted by the Supplier for review and approval by the Buyer prior to the initiation of production. Where FAI is contractually required, the SPC plan shall be submitted to and approved by Thaler Machine Company LLC prior to First Article inspection by Thaler Machine Company LLC. Unfortunately, many Suppliers may not be able implement true SPC on their shop floor for various reasons, i.e., data taken at the end of the manufacturing process or final inspection. When a Supplier is not able to react immediately to data, then true SPC is not implemented at the facility and this situation must be explained in the SPC Plan.

The SPC plan shall detail the process capability studies to be performed, the SPC methods to be applied and a time-phased schedule for total implementation. The SPC plan shall also identify the operations where SPC will be implemented; the sample size and frequency of measurements; the criteria to be used for modifying the sample size and frequency; the Quality Assurance procedures to be used to validate the accuracy, adequacy, and interpretation of the data; criteria to be used for determining an out of control condition; identification of the responsibility for performing measurements and corrective actions; and the corrective action procedures to be used and actions to be taken upon statistical signal or detection of an out of tolerance item.

Statistical evidence of item quality in the form of control charts shall be prepared and maintained for each characteristic identified in the plan. The recording of data and plotting of charts shall be updated at each sampling interval. The charts shall identify all corrective actions to be taken upon statistical indication that an item is moving toward an out-of-control condition. All charts shall be considered quality records to be retained by the Supplier in accordance with requirements as stated in the Purchase Order and shall be made available for review or provided upon the request of Thaler Machine Company LLC.

When SPC has been implemented and the processes have demonstrated a state of statistical control and the item(s) conform to final acceptance specifications, the Supplier may request that sampling in accordance with the specification be reduced for acceptance purposes on those controlled characteristics. Upon approval by Thaler Machine Company LLC, acceptance shall then be based upon the reduced sampling, the control charts, and the SPC plan approved by Thaler Machine Company LLC. Thaler Machine Company LLC shall not unreasonably withhold approval. At the discretion of Thaler Machine Company LLC, should the process warrant, the authorization for reduced inspection may be withdrawn.

A mitigation plan is required for those features not meeting the following requirements (unless specified in another document):

- Cpk/Ppk Requirement for Plastic Parts  $\geq 1.0$
- Cpk/Ppk Requirement for Metal Parts  $\geq 1.33$  (Majors, Minors)
- Cpk/Ppk Requirement for Metal Parts  $\geq 1.67$  (Critical)

## 269. Characteristics Not Verifiable Upon Receipt

The supplier shall provide adequate controls, within the quality system, to ensure that characteristics not verifiable upon receipt are adequately controlled.

## 270. Inspection Sampling Plan C=0

The Supplier shall perform lot sample inspection on items to be delivered under the Purchase Order, in accordance with the Thaler Machine Company LLC C=0 Inspection Plan and the below listed AQLs based on the classification of characteristics. If the inspection reports are required to be submitted, the data shall be reported for each unit requiring inspection in accordance with the sampling plan herein.

In all cases where defective items are found within the sample the supplier shall notify the Thaler Machine Company LLC buyer for instructions on how to proceed with inspection. At a minimum the entire lot shall be inspected 100% for the characteristic found to be out of specification. The instructions may also require additional characteristics to be inspected to ensure conformity of the entire part. All defective items found shall be either corrected or removed from the lot. Reference Thaler Machine Company LLC C=0 Sampling Plan, Table 1; sample size is based on lot size.

Unless otherwise noted, Classification of characteristics shall be as designated on applicable drawings, or specifications. If not so designated, it shall be in accordance with the following:

Critical Characteristics – 100% Inspection Required

- a. Pressure tightness or leak rate requirements (on such items as pressure vessels, vacuum chambers, tanks, capacitors, fluid line, and as otherwise called out on drawings and specifications).
- b. Surface finish of better than  $16\sqrt{\text{micro finish}}$  [ $0.4\sqrt{\text{metric}}$ ].
- c. Total dimensional tolerance less than .001 in. or 0.025 mm.
- d. Purchase order, drawing or specification required functional characteristics.

Major Characteristics – AQL 1.0 Inspection Required

- a. Total angular tolerance of less than  $0^\circ 30'$ .
- b. Total dimensional tolerance, including form (perpendicularity, parallelism, run-out, contour, etc.) from .001 in. or 0.025 mm up to but not including .005 in. or 0.125 mm.
- c. Surface finish from  $16\sqrt{[0.4\sqrt{\text{micro finish}}]}$  up to but not including  $63\sqrt{[1.6\sqrt{\text{micro finish}}]}$  (micro finish).
- d. Class 3 or modified form threads.
- e. Weld, braze or solder joints (visual inspection unless otherwise specified)
- f. Electrical characteristics such as capacitance, resistance, inductance, voltage, amperage, etc.
- g. Weight with tolerance of less than 1% of total weight, e.g.,  $100g \pm 0.95g$ .

Minor Characteristics – AQL 4.0 Inspection Required

All characteristics not specified above except reference dimensions.

1 Defect = Rejection of entire lot.

AQL			0.4	0.65	1.0	1.5	2.5	4.0	6.5	10
Lot Quantity			SAMPLE SIZE							
2	to	8	*	*	*	*	5	3	2	2
9	to	15	*	*	13	8	5	3	2	2
16	to	25	*	20	13	8	5	3	3	2
26	to	50	32	20	13	8	5	5	5	3
51	to	90	32	20	13	8	7	6	5	4
91	to	150	32	20	13	12	11	7	6	5
151	to	280	32	20	20	19	13	10	7	6
281	to	500	48	47	29	21	16	11	9	7
501	to	1,200	73	47	34	27	19	15	11	8
1,201	to	3,200	73	53	42	35	23	18	13	9
3,201	to	10,000	86	68	50	38	29	22	15	9
10,001	to	35,000	108	77	60	46	35	29	15	9
35,001	to	150,000	123	96	74	56	40	29	15	9
150,001	to	500,000	156	119	90	64	40	29	15	9
500,001	&	over	189	143	102	64	40	29	15	9

NOTE: \*indicates entire lot must be inspected

### 271. Honeywell SPOC 128 Inspection Sampling Plan

This clause is for all material where Honeywell is the customer of Thaler Machine Company LLC and is superseded by Honeywell SPOC 128 and Honeywell SPOC 128 Supporting documentation

Critical Characteristics - inspected to 100 percent

- Structural Critical (SC)
- Hardness Critical (HC)
- Any characteristic defined as Critical Per Engineering B/P or specification Structural

Major Characteristics - Inspected to 97 percent AQL

- Dimensional total tolerances equal to .010 inch or less
- Any characteristics classified as Major Per Engineering B/P or specification
- Angular Characteristics tolerance of +/- 0 degrees, 30 minutes or less
- Surface Finish Characteristics 32 finish or less

Minor Characteristics - Inspected to 92 percent AQL

- Dimensional total tolerances equal or greater than .0101 inch
- All characteristics not otherwise classified Per Engineering B/P or specification

Non-Linear Characteristics – Inspected to 100 percent

- All notes, materials, processes, functional testing, part marking & traceability related evidence

Initial Reliability Requirement (IRR) - The degree of confidence that a part will conform after completion of all manufacturing steps, or the expected rate at which defect-free parts are produced. Operationally, it is the number of consecutive units of product that must conform to requirements before the supplier is eligible to perform acceptance sampling.

IRR Table

Critical	IRR: 100%	Establishing Inspection of a Characteristic: 100% Inspection
Major	IRR: 97%	Establishing Inspection of a Characteristic: 76 Accepted - in a row
Minor	IRR: 92%	Establishing Inspection of a Characteristic: 28 Accepted - in a row

First time production must establish IRR level prior to sampling.

If sampling inspection reported nonconformance results in even one (1) reject (c=0), the lot shall be rejected and 100% inspected. Any reject of any characteristic resets the IRR for the complete part unless the supplier petitions and receives relief from Thaler Machine Company LLC through an authorized Honeywell representative (i.e., FQE, site SQE or Site QA Manager, etc.). Rejects coded for administrative issues that do not affect the form, fit or function of the part will not affect the IRR.

# Supplier Quality Assurance Requirements (SQAR)

Once a non-conformity is detected, the IRR must then be re-established on the next consecutive production lot(s) prior to resuming of Lot or Continuous sampling methodologies.

Thaler Machine Company LLC through the Honeywell Quality Manager of the site issuing the purchase order may relax the 100 percent sampling requirement while establishing (or re-establishing) the IRR if the measurement is determined to be not practical or places an undue burden on the supplier to perform. This approval must be obtained in writing and be maintained as part of the suppliers sampling inspection records.

## Acceptance Sampling Requirements

**Critical Characteristics IRR = 100% Reliability**  
Critical characteristics are inspected 100%

**Major Characteristics IRR = 97% Reliability**  
76 in a row to establish IRR

Lot Sizes	Sample Sizes
up to 9	All
10	9
11	10
12 to 13	11
14 to 15	12
16 to 17	13
18 to 20	14
21 to 24	15
25 to 29	16
30 to 35	17
36 to 44	18
45 to 57	19
58 to 78	20
79 to 118	21
119 to 233	22
234 to 2536	23
2537 & up	24

**Minor Characteristics IRR = 92% Reliability**  
28 in a row to establish IRR

Lot Sizes	Sample Sizes
up to 5	All
6 to 7	5
8 to 11	6
12 to 19	7
20 to 53	8
54 & up	9

## 272. Non-destructive Evaluation (NDE)

Non-destructive Evaluation (NDE) shall be per the requirements of this order, referenced codes, standards, drawings, and specifications. NDE controls shall include qualification/certification of personnel, material, and calibration of equipment. Prior to production, the supplier shall submit a copy of nondestructive evaluation procedures and technique sheets to the Thaler Machine Company LLC buyer, who will coordinate Thaler Machine Company LLC Quality Assurance review and approval. Formal approval will be returned to the supplier. The supplier shall make no changes to any technique sheet that has been formally approved by Thaler Machine Company LLC. All proposed changes shall include specific details and effectivity of the changes. No changes shall be implemented without prior written approval from the Thaler Machine Company LLC buyer. As Thaler Machine Company LLC is typically a make to order entity, approval from Thaler Machine Company LLC's customer is also typically required.

## 273. No Glass Beads

Items on this purchase order (or parts used to make items on this purchase order) shall not be cleaned using glass beads.

## 274. Weld Schedule

The supplier shall develop a Weld Process Specification (WPS). Weld samples must be produced from this WPS which meet all requirements. The WPS must be approved by Thaler Machine Company LLC prior to start of production. A WPS will be required for every weld joint and weld type. The WPS shall identify the process parameters and settings required for acceptable production including any information required by the engineering drawing or any applicable specifications. All WPS must be developed by either an AWS (American Welding Society) certified weld inspector or equivalent, and/or an AWS certified weld engineer or equivalent. Certificate must include the AWS with qualifying level credentials of operator or include the AWS qualifying training record with level for operator.

## 275. No halogenated Solvents

The primary concerns addressed by titanium compatibility evaluation are:

Stress Corrosion Cracking: due to exposure to liquid materials that may contain solvents, acids, or other chemicals that attack titanium alloys

- Hydrogen Embrittlement: due to improper exposure to acids or other hydrogen-imparting chemicals
- Solid Embrittlement: due to exposure to incompatible metals such as plating or other materials containing these metals as fillers, etc.

Solid materials that may be used in titanium hardware processing or end item assemblies that are known to be free from incompatible metallic elements and/or do not liberate incompatible liquids are considered non-applicable to the requirements of this specification. Examples of materials that do not require compatibility testing include ceramic/oxide abrasive media, industry-standard nitride-based coatings on cutting tools, plastic tooling, polymeric sealing materials and EPDM insulation.

## 276. Supplier Record Retention – X years

The Supplier (and any sub tier) shall maintain adequate records of all required inspections and tests, including such records or certifications provided to the Supplier by its subcontractors, for “x” years after final payment. Thaler Machine Company LLC to select from the following:

- Not required
- 10 years (Only applicable to commercial products)
- 15 years (Only applicable to commercial products)
- 20 years (Minimum record retention for aerospace and defense products)
- 25 years
- 30 years
- Indefinitely

Supplier (and any sub tier) shall keep on file records reflecting that all materials and finished items were controlled and tested in accordance with and met the specifications detailed on the purchase order. Supplier (and any sub tier) shall maintain complete books and records, including inspection records, with respect to all goods and services, which records shall be available to Buyer during performance of this Order and until the later of designated years after final payment; final resolution of any dispute involving the goods or services delivered hereunder; or the latest time required by applicable law or regulation.

Supplier and its subcontractors shall at any time, and after notice by Buyer,

- Grant to Buyer, Buyer’s customers and/or to any applicable regulatory authority, unrestricted access to (or if Buyer so requests, provide to Buyer copies of) such books and records, wherever such books and records may be located (including third-party repositories), and
- Provide Buyer, Buyer’s customers and/or any such authority the right to access, and to perform any type of inspection, test, audit or investigation at Supplier’s premises, including manufacturing and test locations, for the purpose of enabling Buyer to verify compliance with the requirements of this Order or for any other purpose indicated by Buyer’s customers or said authority in certification, manufacture, use and/or connection with the design, development or support of the goods or services.
- Shall furnish all reasonable facilities and assistance for the safe performance of the inspection, test, audit and/or investigation.

Records shall be retained the designated years after final payment unless otherwise stated in PO. Records shall be maintained for the retention period in a manner that prevents damage from fire, moisture, pests, power interruption, or any other deteriorating effects. Supplier shall notify the Thaler Machine Company LLC buyer if conformance to this requirement cannot be met. In such an instance, copies of records shall be provided to Thaler Machine Company LLC buyer, who shall retain such records for the required record retention period or forward to Thaler Machine Company LLC customer.

Thaler Machine Company LLC buyer shall be notified thirty days prior to destruction of documentation related to Thaler Machine Company LLC buyer orders.

A supplier (and any sub tier) who ceases operations (i.e., goes out of business) shall contact the Buyer to plan for the transfer of all quality records Thaler Machine Company LLC for storage. A supplier (and any sub tier) who discontinues acceptance of Thaler Machine Company LLC purchase orders, but whose business remains intact, shall be responsible for the archival of all quality-related records for the time periods specified on the PO.

Legible and reproducible electronic copies of records are acceptable. If computer generated data is supplied, it shall be the responsibility of the Supplier to provide any cyber records in readable condition utilizing a current, generally accepted method or program. If needed, the supplier shall submit to Thaler Machine Company LLC, an interpreter instruction listing describing test or sequence number versus drawing parameters.

## **277. Military Specification Cancellation**

DoD Acquisition Reform has resulted in the obsoleting or cancellation of some military specifications, and in some cases no replacements are noted. In some cases, the obsolete specification is not for new designs but is still valid for existing applications. Thaler Machine Company LLC encourages its suppliers to request approval for use of alternate specifications that replace cancelled specifications. If a cancelled specification lists an alternate, please notify Thaler Machine Company LLC Buyer for alternate specification use. As Thaler Machine Company LLC is typically a make to order entity, direction from Thaler Machine Company LLC's customer is also typically required.

## **278. Foreign Object Damage or Debris Prevention (FOD)**

The supplier (and any sub tier) shall establish and maintain an effective Foreign Object Elimination (FOE)/Foreign Object Damage/Debris (FOD) Program to reduce/eliminate FOD using NAS-412 as a guideline. The program shall be proportional to the sensitivity of the design of the product(s) to FOD as well as to the FOD-generating potential of the manufacturing methods. The supplier will document and investigate, determine root cause, and eliminate repetitive nonconformances related to FOD incidents. The written procedures developed by the supplier shall be subject to review and auditing by Thaler Machine Company LLC and disapproval when the supplier's procedures or policies do not accomplish their objectives.

Supplier (and any sub tier) shall utilize only packaging material to prohibit Foreign Object Damage (FOD), part contamination, part obstruction or non-preservation residue.

Supplier (and any sub tier) shall provide training to associates and provide records as evidence of training upon request.

## **279. Plated Components, Assemblies and Mechanical Items**

The Supplier shall ensure that items delivered under the Purchase Order do not contain any pure tin finishes, or any tin-lead (SnPb) plating shall result in a finish of no less than 3% lead.

This does not apply to any MIL-SPEC items, or any Buyer supplied drawings, specifications, and/or other applicable documents that allow the use of tin (Sn) with less than 3% lead (Pb).

The Supplier shall provide a Certificate of Conformance with each shipment stating that the Supplier has verified that the delivered items meet the above listed composition requirements.

## **280. Packaging Time, Temperature, Static Discharge, or Environmentally Sensitive Items**

Items described in their design, specification, or manufacturers' documentation as sensitive to time, temperature electrostatic discharge, or other environmental conditions and have special packaging, marking, and handling requirements and controls specified, shall be packaged, marked, and handled in accordance with those requirements and controls to preclude damage or deterioration to the product during shipment and upon receipt.

## **281. Packaging Returned Product and Test Articles/Coupons, etc.**

Parts, samples, items, test coupons that are shipped as required for testing or destructive testing or have been expended in testing shall be packaged separately and uniquely identified as samples or test articles and not for flight or production usage.

## **282. Electrostatic Discharge Protection (ESD)**

The items to be delivered under the Purchase Order may be sensitive to electrostatic discharge. The Supplier (and any sub tier) shall ensure that ESD protection criteria are in accordance with approved common practices.



## 283. As-Built Configuration List

The supplier shall furnish with each unit a legible and reproducible copy of the “as-built” parts list (including Thaler Machine Company LLC furnished parts), identifying all part numbers, configuration, serial numbers (when required), lot numbers, and quantities.

## 284. Shelf-Life Requirements – Thaler Machine Company LLC Consumable Material

The Supplier shall provide shelf-life information with the shipment. The information shall include:

- Product Name
- Manufacturer's name
- US Hazardous Materials Identification System (HMIS) information
- Manufacturer's compound/batch/lot number (as applicable)
- Manufactured, cure, and/or shelf life start date as applicable
- Suggested expiration date
- The suggested expiration date format shall be MM/DD/YYYY or YYYY/MM/DD.
- Specification to which the item is purchased, with type and class (if applicable)
- Storage temperature (if applicable)
- If the material is temperature sensitive, storage requirements must be labeled on the exterior surface of each package shipped.

For non-Supplier Managed Inventory contracts, the Supplier shall provide material with at least 75% of the specified shelf-life remaining. Supplier shall not ship material that cannot meet this requirement without prior written approval from Thaler Machine Company LLC Buyer.

For Supplier Managed Inventory contracts, the minimum remaining shelf life upon delivery will be set at 25%, in consideration of the Just-In-Time (JIT) delivery process.

## 285. Shelf-Life Reporting for Supplier Used Material

The Supplier (and any sub tier) maintain a system to manage shelf-life material. The Supplier shall provide shelf-life information (Including sub tier information) with the shipment. The information shall include:

- Product Name
- Manufacturer's name
- Manufacturer's compound/batch/lot number (as applicable) or Supplier lot number
- Expiration date
- The suggested expiration date format shall be MM/DD/YYYY or YYYY/MM/DD.
- Specification to which the item is purchased, with type and class (if applicable)
- Statement of compliance that all materials used were within shelf life.

For non-Supplier Managed Inventory contracts, the Supplier shall provide material with at least 75% of the specified shelf-life remaining. Supplier shall not ship material that cannot meet this requirement without prior written approval from Thaler Machine Company LLC Buyer.

For Supplier Managed Inventory contracts, the minimum remaining shelf life upon delivery will be set at 25%, in consideration of the Just-In-Time (JIT) delivery process.

## 286. Hazardous Materials

Supplier shall package, label, transport and ship hazardous materials or items containing hazardous materials in accordance with all applicable federal, state, and local laws and regulations, including but not limited to Title 49 of the Code of Federal Regulations.

Supplier, prior to each hazardous material shipment, shall notify Thaler Machine Company LLC Buyer of its nature and shipment data by such means of communication as will allow for proper preparation for acceptance of delivery by the carrier of the material and shall identify same on all shipping documents.

Supplier represents that each chemical substance constituting or contained in work delivered to the Company is included on the current inventory of chemical substances published by the Administrator of the Environmental Protection Agency pursuant to the Toxic Substances Control Act, as amended.

Supplier will provide Thaler Machine Company LLC with each delivery any Safety Data Sheet applicable to the Work that conforms with, and contains the information required by, the Occupational Safety and Health Act of 1970 and its implementing regulations, or a state approved counterpart, as it may be amended.

## 287. Training

The supplier must have written procedures that ensure:

- Personnel are trained and/or qualified to be capable and competent prior to performing their assigned work.
- Personnel are provided continuing training to maintain job proficiency.
- Evidence of training, qualification, or certification are maintained; and
- Qualification is based on a combination of factors including education, training, skills, and experience.

Evidence of personnel training, qualification, or certification must also be retained for a minimum of 3-years or life of the qualification or certification whichever is later.

## 288. Sub Tier Procurement

Suppliers are responsible to ensure that purchased products and services conform to all Buyer Purchase Order requirements. The Supplier must have written procedures to ensure that:

- Procurement documents, including contracts, contain correct requirements
- Prospective sub tiers are evaluated and selected based on specified criteria, technical capabilities, and rigor of their QMS
- Procured items and services must meet the requirements defined in the Buyer's Purchase Order
- The supplier must have an established process for the prevention of Counterfeit Components/Parts from being sold to the Buyer as follows:
  - The supplier must provide counterfeit component/parts awareness training to its personnel
  - The supplier must flow down requirements to their suppliers to reduce the risk of receiving suspect/counterfeit parts
  - If suspect or counterfeit components/parts are identified/received the process must address the containment, evaluation, disposition, and disposal of the components/parts
  - Any receipt of suspect or counterfeit components or parts in support of a Buyer's Purchase Order must be reported to the Buyer and immediately forwarded to Thaler Machine Company LLC Buyer

## 289. Sub tier Supplier Evaluation, Selection, and Monitoring

The Supplier must select any sub tier based on assessment of ability to supply product in accordance with requirements, including quality requirements and technical capabilities for the product(s) and service(s) being procured.

Any sub tier evaluation and selection must be documented.

Any sub tiers must be monitored regarding the effectiveness of their QMS and the quality of their product.

The Supplier's purchase orders or contracts to any sub tier must provide for Thaler Machine Company LLC, Thaler Machine Company LLC customers, and/or regulatory agencies, government representatives to perform quality surveys and inspections at sub tier locations where materials or services are rendered.

## 290. Annual Validation

At least annually, for procurements that support Thaler Machine Company LLC Purchase Orders, The Supplier (and any sub tier) shall verify the validity of their supplier's Certificate of Conformance through independent testing on a minimum of one (1) part number per Supplier by any of the following methods

- Testing can be performed by an independent test house approved by the Buyer, or
- Testing can be performed internally by the Buyer or designated representative using capable test equipment, or
- The Buyer or designated representative can perform an onsite audit of each sub tier providing material to verify the validity of that sub tier's Certificate of Conformance.

Annual validation requirements are not applicable to Commercial (COTS) products, such as, nuts, bolts, screws, resistors, diodes, chemicals, etc. unless dictated by the PO. It is also not required for Buyer Furnished Materials.

# Supplier Quality Assurance Requirements (SQAR)

**Revision History:**

Rev.	Date	Description
01	8/13/2019	Original
02	10-29-2021	Split file into two files this one and TMC Form 1223

TMC Form Review \_\_\_\_\_ Date \_\_\_\_\_

And

TMC Form Authorization \_\_\_\_\_ Date \_\_\_\_\_