



February 10, 2021

GT Receiving & Inspection Requirements

Presented by: Jim Dempsey





Receiving Inspection requirements for suppliers are derived from the following documents:

- Kulpsville Work Instruction WI-AC-90-10.014 rev. P
- Houston Work Procedure WP_10109 rev. L
- Global Supplier Handbook CP-GP-00-06.003 rev. H

Packaging & Labelling Requirements:

- All products shipped to GT by a supplier or outside processor must be packaged & transported in a means which will protect it against transit and storage damage, deterioration, contamination, as well as against any other condition that would render the product unfit for its intended purpose.
- The packaging shall be designed to protect the product taking into account the product weight, size, geometry, physical and chemical properties in order to eliminate the potential of being unfit for intended usage.
- Metal components and soft materials (such as PTFE) specifically shall not be packaged loosely or in a way which could cause damage in transit from parts coming in contact with each other, such method may include individual use wrapping, boxing, tubing, or egg crating of parts.
- Additional packaging requirements may be required per the purchase order or engineering drawing.

Packaging & Labelling Requirements:

- A supplier label shall be applied to each package shipped to a GT facility with all label information legible and readable. Each package should be segregated by both part number and batch/lot code, not mixing multiple batch/lots or part numbers in the same package. Each label must contain the following information:
 - GT part number & revision level
 - GT purchase order/contract number
 - Quantity & unit of measure
 - Part Description
 - Batch/lot number & manufacture date
 - Supplier name & manufacturing address (including Country of Origin, or predominant origin)
 - GT receiving facility address
 - Any other Packing List requirements as required per the purchase order

Documentation Requirements:

- All paperwork provided must be legible & readable.
- All quantities on packing list paperwork and the physical counts must match each other.
- A certificate of compliance (C of C) will be required for any part which has a revision controlled GT print or GTS specification, which states the drawing &/or specification number and revision level to which the material was manufactured, the date of manufacture, the country of origin, GT purchase order number, and the heat/lot/batch the material was manufactured from.
- If any special processes were performed in alignment with print or specification requirements (ie. plating, passivation, heat treatment, welding, etc.) then these shall be noted on the Certificate of Compliance from the entity performing these processes stating the specification and revision or the process parameters they were completed under.
- All supplier & sub-tier special process supplier C of C's will be required to be signed and dated by hand or signed electronically for signature authorization. Typed C of C's with a printed name on the signature line will not be accepted. The C of C shall state the name and address of the supplier or sub-tier supplier whom provided the product or service.



Documentation Requirements:

- Metal components must include mill certification with material test report of physical & chemical properties, as well as detail for melt process, anneal condition, etc. The material test report must detail both test method used & units of measure (reference EN10204 Type 2.1 & 2.2) including the date of manufacture. **Legibility requirements apply including mill grain size pictures.**
- Any stock shape thermoplastic or elastomer must include material test report which includes criteria required per GT material specification (reference EN10204 Type 2.1 & 2.2), including the date of manufacture and/or cure date.
- All purchased resins, compounds, & chemicals shall include a material specification sheet in the packing list.
- The supplier must state the Country of Origin on both the shipping documentation and on the invoice, in order to comply with all applicable trade regulations where GT conducts business. If the products contain parts and components of various origins then please supply GT with the predominant origin or a percentage of the product origin breakdown.
- All turnkey/custom finished products must include an inspection report which fulfills the requirements on the following page:

Inspection Report Requirements:

- Part inspection requirements may be detailed on the purchase order, the engineering print, or the material specifications and specify either an AQL sampling level per ANSI standard Z1.4, 100% inspection, or refer to a specific customer requirement. If parts are being inspected to an AQL sampling level, then C=0 will be used so that if any non-conforming conditions is found then 100% inspection is required to be put in place.
- All inspection measurements shall be conducted using the appropriate equipment which has been calibrated in accordance with a recognized standard (such as ISO10012 or ANSI/NCSL Z540.3).
- Each inspected sample from the AQL shall have its own individual data recorded on the inspection report. High and low results only for a group of parts will not be acceptable.
- Inspection report fields should not be left blank. Whenever no critical dimensions are identified on the drawing, then all dimensions are to be reported.
- Parts for the AQL sampling plan should be measured periodically from throughout the entire production run and thus capture if the process starts to deviate from control and/or specification limits.

Inspection Report Requirements:

- When not otherwise specified, the inspection report shall default to an AQL 1.5 C=0 sampling plan (reference table below).

ANSI/ASQ Z1.4 1.5 AQL, C = 0			
Lot size	Sample Size	Acc	Rej
1 - 8	100%	0	1
9 - 90	8	0	1
91 - 150	12	0	1
151 - 280	19	0	1
281 - 500	21	0	1
501 - 1200	27	0	1
1201 - 3200	35	0	1
3201 - 10,000	38	0	1
10,001 - 35,000	46	0	1
35,001 - 150,000	56	0	1
150,001 - up	64	0	1

Inspection Report Requirements:

- Part inspection reports shall include all requirements specified on GT print, purchase order, and/or contract including the specified tolerance, maximum, or minimum condition.
- The measurement method used shall be noted in the inspection report (e.g. calipers, CMM, tensile tester, visual, etc.) and shall be appropriate to the type of attribute being inspected.
- The name of the person who completed the inspection should be clearly stated on the inspection report.
- Measurable results must be actual readings (statements like 'OK' or a check mark shall not be accepted).
- The use of ditto marks, correction fluid or correction tape is not allowable.
- Where results based on attribute data is required (e.g., go/no-go gages) the inspection data sheet should clearly state either 'Pass' or 'Fail'.
- Inspection records shall be retained and identified by material batch/lot number so that these may be readily accessible if requested.



February 10, 2021

GT First Article Inspection Report Requirements

Presented by: Jim Dempsey



First Article Inspection requirements for suppliers are derived from the following documents:

- Kulpsville Work Instruction WI-GP-00-06.016 rev. B
- Houston Work Procedure WP_10188 rev. -
- Global FAIR report format FR-QA-0000-00.007 rev. F

First Article Inspection Requirements for suppliers

- Inspection report is to be on GT Form FR-QA-0000-00.007
- Create serialized inspection report for each part inspected (Qty required per Purchase Order)
- Each part is to be serialized so that it is identifiable which inspection report it matches with (bag & label each part separately)
- Submit a bubble print in the package which identifies each dimension and print note individually, and that aligns with the sequence of values on the FAI form
- List all inspection tools used for verifying the parts with serial #/ Tool ID # and list the next calibration due date for the tool on the FAI report
- Certificate of Conformance should be provided which states drawing number, drawing revision, Purchase order #, and Country of Origin
- If raw material is provided by supplier then the raw material mill certifications and MTR must be provided noting all material requirements as noted on print and/ or purchase order
- Certificates of Conformance for every special process from the processing entity (ie. Plating, Heat treating , Passivation, etc.)

First Article Inspection Requirements for suppliers

- Report must contain the following information

Part Number: The GTC FAI part number must be entered;

Revision: The latest FAI GTC part's revision level must be entered. If there is no revision, the revision level must be indicated as ("-");

PO/WO Number: GTC PO or WO number must be entered;

Purpose: One of the boxes needs to be checked;

Number of Sheets Attached: This should include the total number of sheets attached, including C of C, MTR, and any other relevant document;

Supplier Name/Cost Center: The Supplier Name should be entered here;

Supplier Approval Signature: This should be a printed name or unique identification, and signature of the person approving the FAIR at vendor. This signature certifies the evaluation activities are complete and the FAIR is approved to be shipped to GTC Houston;

Date: This is the date when the supplier approved the FAIR;

Date: This is the date when the QC GTC Houston approved the FAIR;

Required Attachments: This section must contain a list of all the additional required documentation. The QC inspector must check if the required documentation is good and indeed attached.



First Article Inspection Report

Part Information			
Part Number:	Revision:	PO/WO Number:	
Part Description:			
Purpose:	<input type="checkbox"/> New GTC Part	<input type="checkbox"/> Revised GTC Part	
	<input type="checkbox"/> New Supplier	<input type="checkbox"/> Process/ Material Change	
Number of Sheets Attached:			
Supplier Information			
Supplier Name/Cost Center			
Supplier Approval Signature:		Date:	
Comments:			
GTC Business Group Approval			
Quality Assurance:		Date:	
Application Engineer:		Date:	
Disposition:	<input type="checkbox"/> Approved	<input type="checkbox"/> Rejected	
Comments:			
Required Attachments			
Certificate of Conformance		Numbered Bubble Drawings	
Material Certifications			
Special Process Certifications (when applicable)			

First Article Inspection Requirements for suppliers

- Report must contain the following information – Report Headers

Part Number: The GTC FAI part number must be entered;

Revision: The latest GTC FAI part's revision level must be entered. If there is no revision, the revision level must be indicated as ("-");

Description: FAI GTC part's description must be entered;

Block Tolerances: These need to be filled, if applicable;

Disposition: Vendor needs to have one of the boxes checked;

Batch: This could be filled with customer's batch number and/or Serial number, and FAI Sample No.;

Inspected by: Name of the vendor's FAI inspector;

Date: This is the date when the vendor had completed the FAIR;

First Article Inspection - Part Attributes Form

Part Number:	Rev:	Description:		
Mold Number:	Compound:	Batch:		
Block Tolerances:		Disposition:		Inspected by:
.XXX ± ____ .XX ± ____ Angles ± ____		<input type="checkbox"/> Accept <input type="checkbox"/> Reject		Date:

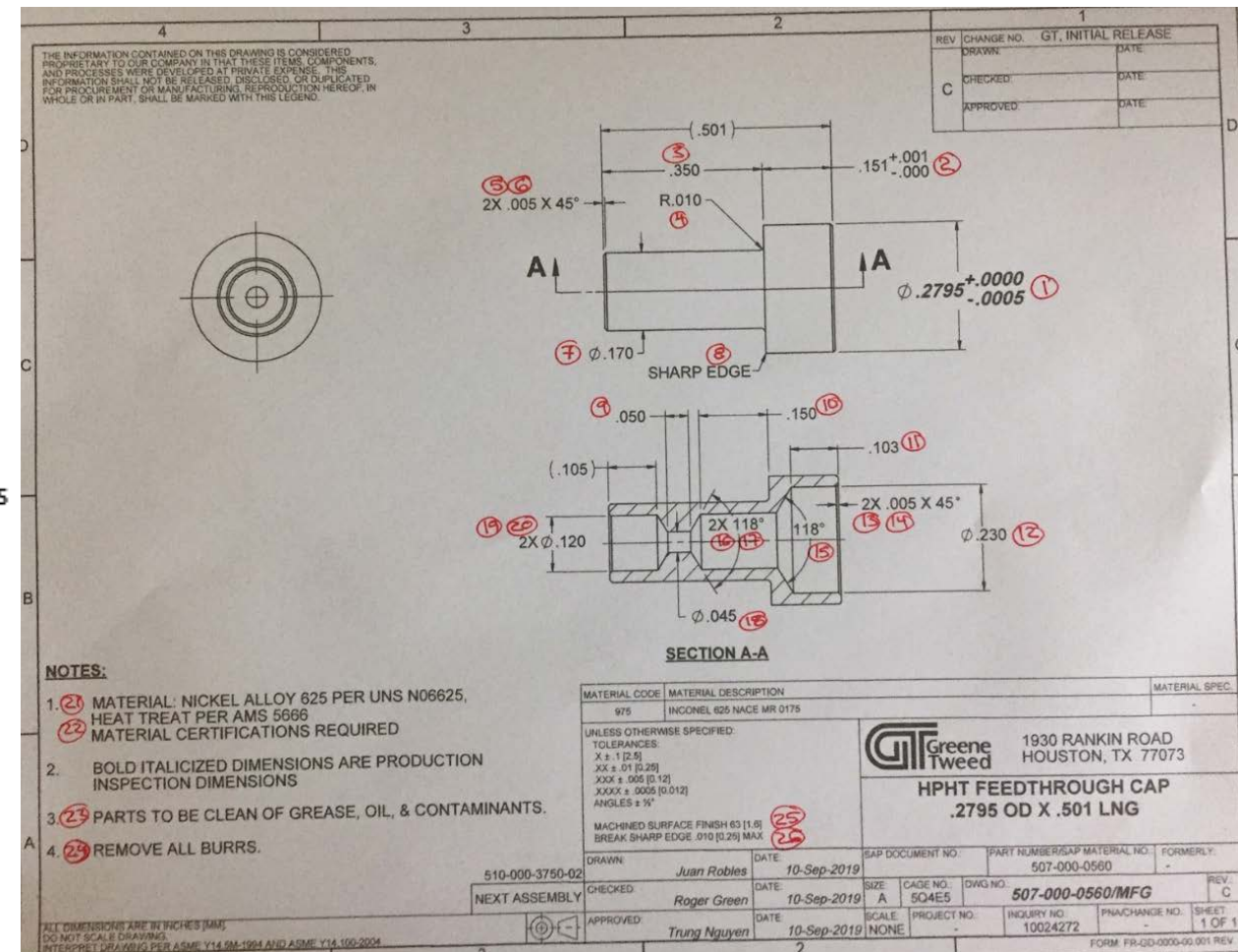
First Article Inspection Requirements for suppliers

- Report must contain the following information – **Ballooned Drawing of the GT Print**

All the necessary characteristics, excluding the reference dimensions, must be identified and ballooned preferably clockwise on the drawing:

- Dimensions;
- Surface finish callouts;
- Area callouts, if any;
- Material and hardness callouts, if any;
- Requirements identified in the title boxes at the bottom of the drawings, if any;
- Balloon callouts on Notes, if any;
- Other, as necessary.

NOTE: When ballooning is not attainable, and alternate method to “ballooning” is to reference drawing sheet and zone location(s).





First Article Inspection Requirements for suppliers

- Report must contain the following information – Dimensions, Tolerances, Measurements, Tools

Item: Each number or letter entered in this column should correspond to the numbers or letters of the ballooned drawing;

Dimension/Note: Corresponding dimensions, notes (Example: Surface finish, GD&T requirements, etc.);

NOTE: Visual Inspection (Pass/Fail) must have been performed on all parts and documented per part.

Actual Dimensions/Notes: As per ballooned drawing, each measurement must be documented;

NOTE: When qualified tooling is used as a go/no-go gage, the results could be recorded as Accept and as an attribute with Pass/Fail check. The tool used should be entered in Tool No. Remarks section.

Pass or Fail: Pass or Fail should have been checked by vendor;

Tool No./Remarks: Each item must should have corresponding No., or tool name. If the item is visual inspection for burrs, for example, then the Remark should be "Visual inspection" and the magnification level, if any used should be documented. If item is Surface finish, for example, then the Remark may be "Surface Comparator".

NOTE: Each part must have one Form FR-QA-0000-00.007 p. 2 First Article Inspection – Parts Attributes Form completed.

Second page of the form can be reproduced as many times as needed, accounted that the total number of pages is entered accordingly.

Item	Dimension/Note	Actual Dimension/Note	Pass	Fail	Tool No./Remarks

First Article Inspection Requirements for suppliers

- Report must contain the following information – Equipment ID & Calibration

Part Number: The GTC FAI part number must be entered;

Revision: The latest GTC FAI part's revision level must be entered. If there is no revision, the revision level must be indicated as ("-");

Description: FAI GTC part's description must be entered;

Tool/Gage #: IDs or Numbers of Equipment, Gages, Tools used by the vendor for their inspection must be entered;

Tool/Gage Description: Short description of the equipment, tool, gage, etc. used. For example: Optical Comparator, 0-1in. Micrometer, .0001in. Test Indicator;

Calibration Due Date: Calibration due date of the equipment should be entered in the following format: MM/YY (month/year).

First Article Inspection - Calibration Data

Part Number:		Revision:	Description:
CHECK	Tool/Gage #	Tool/Gage Description	Calibration Due Date
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			

First Article Inspection Requirements for suppliers

- Submitting Serialized parts for First Article Inspection – Individually identified and numbered



FAI - Example of labeled FAI order



FAI - Example of packaged and labeled FAI samples