Supplier Quality Manual

Approved by: **Robert Chianese, VP, Supply Chain**

Table of Contents

1. Purpose

The purpose of this document is to provide Suppliers with baseline Quality requirements that apply when referenced within AIT's Purchase Order. If the AIT Supplier identifies conflicts between this document and any other contractual requirements, models or drawings, or the AIT Supplier is unable to meet any requirements, immediately contact the AIT purchasing representative with all questions or concerns.

2. Scope

Applies to products and services to print supplied to AIT for incorporation into final product. Provides supplier with product requirements not specified on the drawing, MBD or other engineering documents provided. Engineering data supersedes this specification.
Provides subcontractors with AIT quality source inspection requirements.
Defines the type and extent of control over subcontractors based on the type of products and services provided and their impact on final product quality.

3. Related Documents and Records

Name	Comments
PF001 – AIT Supplier Quality System Survey	Survey approval is a prerequisite for PO issuance. Obtain from the AIT purchasing representative.
AIT Quality Clauses	See PO for applicable Quality Clauses
AIT Terms and Conditions (U.S. Suppliers)	Applies to all U.S. PO's
AIT Terms and Conditions (E.U. Suppliers)	Applies to all E.U. PO's
FAR and DFARS Flow Down Clauses	Applicable when referenced on the PO, drawings, or other contractual documentation.
ES-02 – AIT Engineering Specification - Torque, Lube and Loctite Usage	
ES-04 – Engineering Specification for Weld Callouts	

4. Definitions

Term	Abbrev. / Acronym	Definition
ANSI National Accreditation Board	**ANAB**	--
Approved Supplier List	**ASL**	--
Authorization to Ship	**ATS**	--
Buy American Act	**BAA**	--
Commercial Product Supplier	**--**	Distributors of catalog and standard inventory items.
Coordinate Measurement Systems	**CMS**	Measurement equipment such as Coordinate Measuring Machines (CMM), Portable Coordinate Measuring Machines (PCMM) such as articulating arms, and Laser Trackers.
Certificate of Conformance	**CofC**	--

Term	Abbrev. / Acronym	Definition
Detail Supplier	**--**	Providers of details and subassemblies; drill jigs and N/C blocks require dimensional results reported in aircraft coordinates, all other detail and subassembly dimensional results are reported in the detail datum system unless otherwise specified.
Defense Federal Acquisition Regulation Supplement	**DFARS**	--
Defense Priorities and Allocations System	**DPAS**	--
Digital Product Definition	**DPD**	The electronic data elements that specify the 3D CAD geometry and all design requirements for a product (including notation and parts lists), and the use of this data throughout an integrated CAD/CAM and CMS.
First Article Inspection	**FAI**	--
Federal Acquisition Regulation	**FAR**	--
International Traffic in Arms Regulations	**ITAR**	--
Model Based Definition	**MBD**	A dataset containing the exact solid, it's associated 3D geometry and 3D annotation of the product's dimensions and tolerances (and may include parts/notes list) to specify a complete product definition. This dataset does not contain a conventional 2D drawing. MBD is one possible form of DPD.
Non-Disclosure Agreement	**NDA**	--
National Institutes of Standards and Technology	**NIST**	--
Outside Processing	**OSP**	Suppliers that make manufactured goods (e.g., complete tooling, subassemblies, details, etc.)
Procedure Qualification Record	**PQR**	--
Quality Management System	**QMS**	--
On-Time Delivery	**OTD**	--
Qualification Test Record	**QTR**	--
Special Process Supplier	**--**	Providers of services to product that require certified processes and personnel, such as welding, heat treating and non-destructive testing.
Turnkey Supplier	**--**	Providers of assemblies complete to final product engineering data; dimensional results must be reported in aircraft coordinates.
Welding Procedure Specification	**WPS**	--

5. Supplier Qualification and Evaluation

5.1. Initial Qualification

All AIT suppliers must be initially qualified by AIT Supply Chain prior to issuance of any Purchase Order. The received supplier qualification documents are reviewed and retained by AIT Supply Chain to determine qualification status. Basic qualification requires either the completion of AIT's Supplier Survey, **PF001**, or a valid ISO9001 / AS9100 certificate from a certification body accredited by ANAB.

5.2. Additional Qualification Requirements

Some work packages require additional supplier requirements based on the specific products and services requested. When additional requirements are required for the performance of the PO, AIT Supply Chain will request documentation to verify the supplier meets all requirements prior to PO issuance. The following table summarizes the most common additional supplier qualification requirements for these cases:

Additional Requirements	Required Documentation
Welding	Valid Welder Certifications, Welding Procedure Specifications (WPS), Procedure Qualification Records (PQR)
NDT	NDT procedures, personnel certifications
ITAR Registration	Valid and current ITAR registration letter from DDTC (acceptable if the Registrant Code is redacted)
FAR / DFARS	Confirmation of FAR / DFARS flow downs (accepted PO with flow down reference is acceptable)
DPAS	Confirmation of DPAS flow downs (accepted PO with flow down reference is acceptable)
Liability Insurance	Certificate of insurance (when working at an AIT or AIT Customer site)
NADCAP Certificate	Applicable valid and current NADCAP certificate
ISO9001 / AS9100 Certificate	Valid and current ISO/AS certificate from an approved certification body accredited by ANAB
DPD Approval	PF001 (DPD section) or DPD Approval Letter from a Prime Customer
HUBZone Certificate	Valid and current HubZone Certificate from the SBA
Small Business	Certification document
Small Disadvantaged Business	
Service Disabled Vet Business	
Veteran Owned Business	
Minority Owned Business	
Woman Owned Business	

Note: When referenced on the PO, see AIT Quality Clauses, **QA13 – QUALITY SYSTEM REQUIREMENTS**, **QA14 – FAR, DFARS**, and **QA15 – ITAR, EAR, and CGP**, for additional requirements.

5.3. Supplier Qualification Decision

The supplier will receive a qualification decision after AIT Supply Chain reviews and verifies all received qualification documentation. If the supplier receives qualification approval, AIT Supply Chain will place the supplier on AIT's ASL to authorize purchases for the scope of qualification.

5.4. Supplier Performance Evaluation

Supplier performance is monitored throughout the performance of the Purchase Order to ensure the supplier provides products and services on-time and at the expected quality level. If AIT Supply Chain detects specific risks associated with the performance of the Purchase Order, AIT Supply Chain may ask the supplier for a recovery plan or similar to mitigate undesirable effects.

On a monthly basis, AIT Supply Chain evaluates supplier performance based on On-Time Delivery (OTD) per Purchase Order commitment dates and acceptable Quality per Purchase Order requirements for products and services (measured using internal NCRs and/or internal performance survey for contractors and service providers). If the supplier does not meet performance criteria for OTD or Quality, it will impact the supplier's performance score and the supplier will be categorized as either a medium or high-risk supplier. Categorization as a medium or high-risk supplier could impact the supplier's ability to win new awards and may even result in the disqualification from AIT's Approved Suppliers List. Suppliers can improve their performance score by ensuring OTD is met and to ensure products and services are provided free of nonconforming conditions. When warranted by the discretion of AIT Supply Chain, corrective action may be requested for specific issues affecting the supplier's performance. Failure to respond to AIT's corrective action request may result in disqualification from AIT's Approved Suppliers List.

AIT Supply Chain will distribute supplier performance scorecards on a quarterly basis to AIT's top suppliers (by spend or volume). Any supplier can request their performance scorecard at any time by contacting AIT Supply Chain.

Note: When referenced on the PO, see AIT Quality Clause, **QA23 – SUPPLIER PERFORMANCE AND MEASUREMENT**, for additional information.

5.5. Requalification and Record Maintenance

After initial qualification, suppliers are reevaluated every 3 years from the date of initial approval by following the same qualification process outlined in section **5.1**.

If at any time the supplier's capabilities or scope of qualification changes, or if any document provided to AIT Supply Chain expires, the supplier must contact AIT Supply Chain and provide the current information to update the supplier's qualification file without undue delay. Expired documents tied to the supplier's scope of qualification and approval may result in delays, work stoppage\cancellation, or ineligibility for future contract awards.

5.6. Removal from ASL / Disqualification

AIT Supply Chain reserves the right to remove any supplier from the ASL at any time for any reason, including, poor performance, lack of competitive pricing, and/or lack of use.

6. General Requirements

6.1. Nonconforming Product

NONCONFORMING ITEMS SHALL NOT BE SHIPPED UNLESS AUTHORIZED IN WRITING BY THE AIT BUYER. THE SUPPLIER SHALL NOTIFY THE AIT BUYER PROMPTLY WHEN A NONCONFORMANCE IS DISCOVERED THAT MAY AFFECT DELIVERED ITEMS. NOTIFICATION SHALL INCLUDE TRACEABILITY INFORMATION TO IDENTIFY AND LOCATE AFFECTED ITEMS / MATERIAL.

AIT reserves the right to return or rework (if the Supplier is unable to rework the item to an acceptable level that meets AIT's schedule constraints), at the Supplier's expense, any or all of a shipment in which nonconforming parts have been found at any time.

Rework is considered the return to conformance of a nonconforming feature or item using original instructions and processes. Nonconforming items that result in rework beyond existing instructions, requires written rework instructions and those rework instructions will capture the results of the rework.

Rework documentation shall be made available for AIT review upon request. This requirement shall be flowed down to all sub-tier suppliers. Under no circumstance shall a repair (the use of different methods, materials or processes to correct a nonconformance) or use-as-is be permitted without prior AIT approval.

The supplier shall notify AIT immediately if their assessment of a nonconformance reveals that it is likely that an escape has occurred and they may have delivered nonconforming product. Include preliminary information as to purchase order number(s), purchase order line item(s), part numbers, preliminary affected number of parts, discrepancy and any containment action taken. Within 5 business days after initial notification, provide AIT with additional information including: preliminary root cause(s), an updated scope of the escape, and preliminary recovery / correction plan.

A nonconformance that cannot be returned to conformance as stated above may be submitted to AIT for consideration (as directed below) but is not a guarantee for acceptance: The Supplier shall maintain a system for controlling nonconforming items and material, including procedures for the identification, segregation, and disposition of nonconforming items and material. All nonconforming items and material must be positively identified to prevent usage, shipment and intermingling with conforming items and material. Nonconforming items and material shall be held in a designated area segregated from conforming items and material and that precludes unauthorized removal. Supplier shall contact the AIT Buyer to submit nonconformances. Requests for clarification or supplemental information about the cause and corrective action associated with nonconformances submitted by the supplier, or created by AIT for supplier provided hardware, shall be provided to AIT within 5 business days of the request date.

Submission is NOT acceptance; suppliers must receive approval in writing before shipment. The acceptance of a nonconforming item shall not be considered a precedent for future actions. Copies of all AIT approved nonconformances (i.e., deviations, concessions, etc.) shall accompany the shipment of nonconforming items.

Note: When referenced on the PO, see AIT Quality Clauses, **QA16 – NONCONFORMING MATERIAL CONTROL & LATENT NONCONFORMANCE NOTIFICATION** and **QA6 – ROOT CAUSE AND CORRECTIVE ACTION**, for additional requirements.

6.2. Calibrated Equipment

Supplier must perform all inspections and tests for conformance to design criteria using calibrated equipment. The Supplier's calibration system shall ensure:

- Valid calibration status of all measurement tools/means
- Calibration status of all measurement tools/means are recorded and controlled
- Equipment certifications are maintained and made available to AIT upon request
- Calibration is performed by accredited laboratories and is traceable to NIST standards or equivalent.

6.3. Elimination of Foreign Objects

Supplier shall take steps to mitigate contamination by foreign objects/debris throughout the manufacture, assembly, test and shipping processes. The Supplier will document, investigate, determine root cause, and eliminate repetitive nonconformances related to Foreign Object Debris (FOD) incidents. In addition, packaging materials will be taken into consideration when mitigating FOD; packaging materials that generate particles, fibers, or other debris are not acceptable.

6.4. Digital Product Definition (DPD)

When required by the PO, Supplier is required to maintain a documented digital product definition (DPD) process. Supplier must ensure dataset derivatives are traceable back to the current authority dataset. Additionally, inspection media is independently derived from and traceable to the authority dataset.

Ensure the documented process is in place to document product inspections (e.g., TIR, FAI, etc.) for product produced from authority datasets. Supplier is responsible to verify 100% of all the features when using customer drawing and or datasets. The same supplier generated derivative 3-D model cannot be used for programming of the fabrication machines (i.e. CNC Programs) and inspection equipment without documented evidence of an independent validation for compliance to the drawing or model provided by AIT.

Note: When referenced on the PO, see AIT Quality Clause, **QA3 – DATA MANAGEMENT AND TRANSMISSION**, for additional requirements.

6.5. Counterfeit Parts Prevention

The Supplier shall make every effort to assure safe, reliable product and mitigate the risk of counterfeit parts entering the system.

A Counterfeit Part is defined to include, but is not limited to:

- An item that is an illegal or unauthorized copy or substitute of an Original Equipment Manufacturer (OEM) or Original Component Manufacturer (OCM) item
- An item that does not contain the proper external or internal materials or components required by the OEM or OCM or that is not constructed in accordance with OEM or OCM design, but is represented as such
- An item or component thereof that is used, refurbished or reclaimed but the Seller represents as being a new item
- An item that has not successfully passed all OEM or OCM required testing, verification, screening and quality control but that Seller represents as having met or passed such requirements

- An item with a label or other marking intended, or reasonably likely, to mislead a reasonable person into believing a non-OEM or OCM item is a genuine OEM or OCM item when it is not.

Note: When referenced on the PO, see AIT Quality Clause, **QA21 – COUNTERFEIT PARTS**, for additional requirements.

6.6. Record Retention

Unless a longer period is specified in this Purchase Order or by law or regulation, Seller and its sub-tier suppliers shall retain all records related to this Purchase Order for a period of ten (10) years from the date of final payment received by Seller. Records related to this Purchase Order include, but are not limited to, financial, proposal, procurement, specifications, production, inspection, test, quality, nonconformance, shipping, export, and certification records. At no additional cost, Seller shall provide timely access to such records to the U.S. Government or Buyer upon request. Once records have been held for the required retention period, Seller shall contact Buyer at least thirty (30) days prior to the disposal of any records. When disposing of records, Seller shall comply with laws or regulations, as applicable, and ensure a secure method is used to render records unusable.

Note: The above requirement is also stated in AIT Quality Clause, **QA10 – RECORD CONTROL**.

6.7. Design Authority and Changes

AIT or its Customers retain all authority for design, or changes to existing design, for components fabricated by a Supplier to be installed into a final assembly. No authority for design responsibilities is to be assumed by the Supplier unless explicitly granted by AIT, its Customers or both.

The Supplier shall not incorporate any changes to any drawing, specification, or digital data provided by AIT, unless instructed to do so by the AIT Buyer in writing. Such instructions will be in the form of an amendment to the purchase order. The Supplier will ensure copies of such authorizations become a part of the inspection package.

Note: When referenced on the PO, see AIT Quality Clause, **QA17 – CHANGES**, for additional requirements.

6.8. Right of Access and Inspection

AIT and AIT's customer and/or government representatives reserve the right to assign representatives for any purpose including verifying all tests and/or inspections performed as a part of the terms and conditions of this Purchase Order(s). These representatives may be on an itinerant or resident basis at the Supplier's facility or those of lower tier suppliers. Suppliers are required to provide AIT representatives and AIT's customer and/or government representatives with reasonable facilities and equipment and access to all areas essential to complete this task throughout all periods of performance under this Purchase Order(s).

Visiting AIT personnel must be notified of required PPE in all areas of the supplier's premises. Suppliers must notify AIT of changes to facility location, or temporary or permanent relocation of work.

Note: When referenced on the PO, see AIT Quality Clause, **QA19 – ADVANCED INTEGRATION TECHNOLOGY SOURCE INSPECTION**, for additional requirements.

7. Commercial Items / Hardware

7.1. Substitutions and Alteration

Commercial items and hardware may not be altered or substituted without prior AIT approval. Any item altered or substituted without prior AIT approval will be treated as nonconforming product per section **6.1**.

7.2. Commercial Item Paperwork

All paperwork received with commercial items (e.g., manuals, certificates, shippers, etc.) must be provided with the overall deliverable documentation.

8. Raw Material

8.1. Substitutions

All material substitutions require prior AIT approval. Any item manufactured from raw material other than what was specified or authorized by AIT will be treated as nonconforming product per section **6.1**.

8.2. Material Traceability

The Supplier and its sub-tiers shall maintain a system that assures full traceability to the material/manufacturing lot and/or any applicable requirements imposed by listed drawing or specification standards. The Supplier shall maintain records that provide lot/batch traceability/batch control number for each shipment.

Materials used must be traceable to the manufacturer's records of acceptance and identified by applicable lot number, date code, material type, specification, country of origin, applicable change letter or number, heat number, etc. In cases where raw material is modified by the supplier (i.e. cut to length, rough Lot machined, etc.), in a way where original markings can't be verified, the Supplier shall mark the material or the package which contains the material in accordance with this requirement.

The Supplier shall make all possible efforts to minimize the number of lot/date codes used in a specific process (i.e. single heat lot) included in each shipment.

8.3. Buy American Act / DFARS Compliant Material

When required on the Purchase Order, material sold to AIT or purchased by the Supplier to manufacture products for AIT must be melted or produced in the United States, its outlying areas, or a qualifying country in accordance with DFARS Part 225.

Note: When referenced on the PO, see AIT Quality Clause, **QA12 – PHYSICAL AND CHEMICAL TEST REPORTS**, for additional requirements.

9. Machining

9.1. Surface Finish

9.1.1. Stock Surfaces

Unless otherwise stated on the PO or model/drawing, stock surfaces must be cleaned to remove scale, debris, etc., prior to performing the next process (e.g., coating, paint, etc.) or delivery to AIT. The supplier may use any of the following methods (or equivalent best shop practice) to ensure a clean stock surface, but must maintain any required tolerances after the operation is performed:

- Wire brushing
- Sanding
- Sandblasting
- Grinding

9.1.2. Machined Surfaces

A machined surface finish of Ra 125 (microinches) is required unless otherwise specified on the drawing/model. For bond and trim tools, machined surface finishes should be free of obvious tool / cutter marks.

9.2. Grain Direction

When material grain direction is called out for machining, the supplier shall retain a photo of the pre-machining stock depicting the specified grain direction. The photo should be named or labeled with adequate information to provide traceability to the material and part.

10. Special Processes

10.1. General

The following general practices apply when a special process is required:

- With the exception of welding and any other process that requires dimensional inspection, parts sent out for outside special processes, such as, but not limited to, plating/coating and heat treatment are to be inspected for visual defects prior to being returned to AIT.
- Suppliers shall review any received certificates or reports to confirm the process met requirements. Supplier shall provide evidence of inspection and certificate / report review when requested.

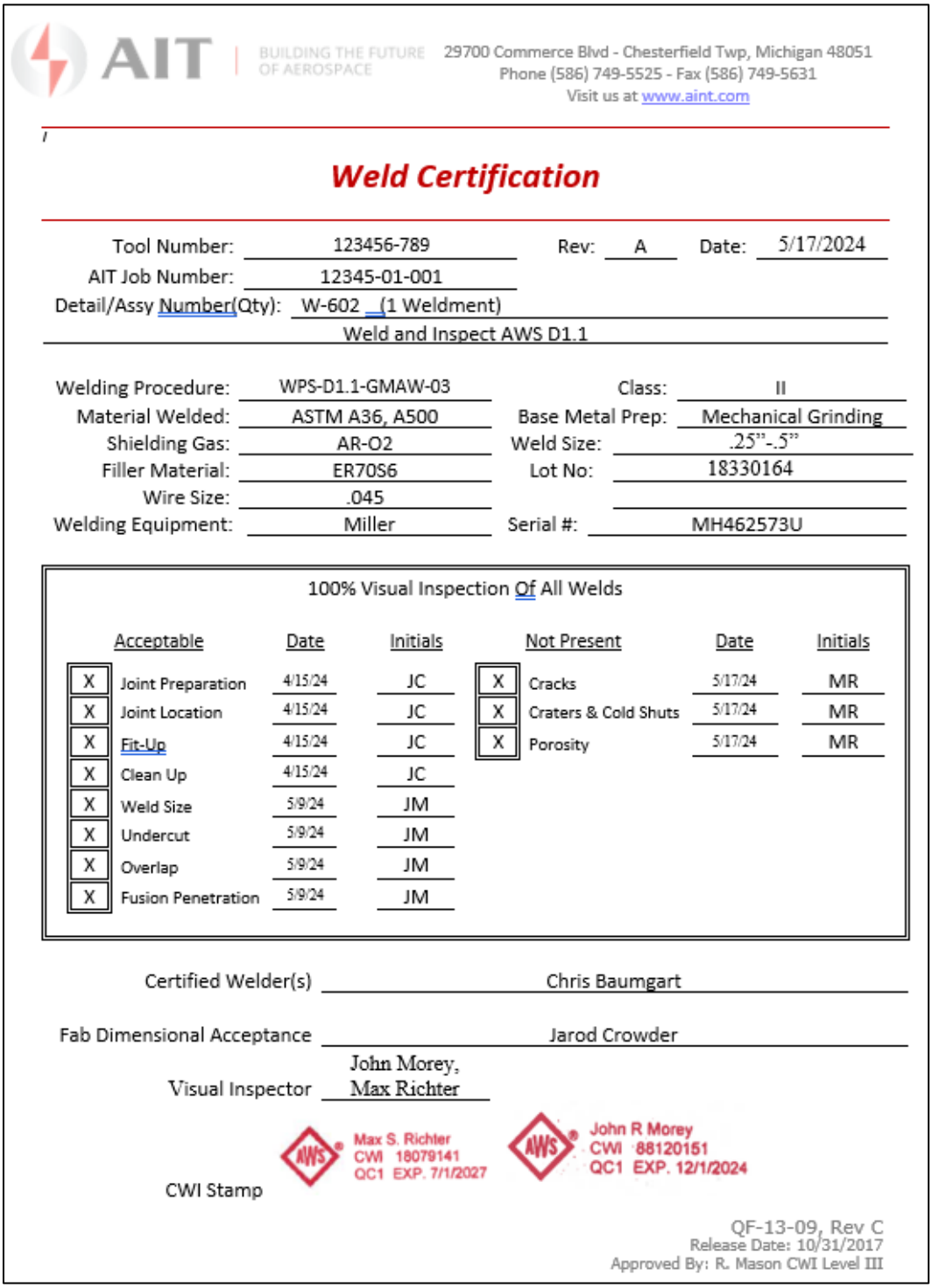
10.2. Welding and Weld Inspection

10.2.1. General Requirements

Welding and weld inspection shall be conducted in accordance with AWS D1.1 and D1.2 or otherwise specified on the PO or drawing / model:

- Welders must be certified to AWS or equivalent. When requested, welder certifications shall be provided with the deliverable documentation.
- Weld processes (i.e., WPS) must be documented and approved by a CWI
- All welds must be visually inspected by an AWS QC1 CWI or equivalent.
- Weld certificates and weld inspection reports are required for all weldments and must include the following product information as applicable:
  - Tool numbers
  - Subassembly numbers
  - Serial numbers
  - Quantity of each weldment
  - Weld specification
  - CWI inspection stamp

The following example shows an AIT Weld Certificate (see next page):



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29700 Commerce Blvd - Chesterfield Twp, Michigan 48051
Phone (586) 749-5525 - Fax (586) 749-5631
Visit us at www.aint.com

Weld Certification

Tool Number: 123456-789 Rev: A Date: 5/17/2024
AIT Job Number: 12345-01-001
Detail/Assy Number(Qty): W-602 (1 Weldment)
Weld and Inspect AWS D1.1

Welding Procedure:	WPS-D1.1-GMAW-03	Class:	II
Material Welded:	ASTM A36, A500	Base Metal Prep:	Mechanical Grinding
Shielding Gas:	AR-O2	Weld Size:	.25"-.5"
Filler Material:	ER70S6	Lot No:	18330164
Wire Size:	.045		
Welding Equipment:	Miller	Serial #:	MH462573U

100% Visual Inspection Of All Welds

Acceptable		Date	Initials	Not Present		Date	Initials
X	Joint Preparation	4/15/24	JC	X	Cracks	5/17/24	MR
X	Joint Location	4/15/24	JC	X	Craters & Cold Shuts	5/17/24	MR
X	Fit-Up	4/15/24	JC	X	Porosity	5/17/24	MR
X	Clean Up	4/15/24	JC				
X	Weld Size	5/9/24	JM				
X	Undercut	5/9/24	JM				
X	Overlap	5/9/24	JM				
X	Fusion Penetration	5/9/24	JM				

Certified Welder(s) Chris Baumgart
Fab Dimensional Acceptance Jarod Crowder
Visual Inspector John Morey, Max Richter
CWI Stamp
Max S. Richter CWI 18079141 QC1 EXP. 7/1/2027
John R Morey CWI 88120151 QC1 EXP. 12/1/2024

QF-13-09, Rev C
Release Date: 10/31/2017
Approved By: R. Mason CWI Level III

Figure 1: AIT Weld Certificate

10.2.2. Class I Weld Requirements

The following are the Class I weld requirements unless otherwise specified on the PO or drawing/model:

- Class I welds may require NDT. When NDT is required, it will be specified by the engineering authority or the welding specification.
- Steel weldments typically require Magnetic Particle Testing (MT) or another NDT method per the applicable specification.

- Aluminum and Invar weldments typically require Liquid Penetrant Testing (PT) or another NDT method per appliable specification.
- Paint is not permitted on the weld plus 1” from the weld toe on each side; no clear coat unless called out.
- Confirm if the weldment requires post weld sandblasting, wire wheeling, grinding, or machining. When sandblast is required prior to paint, tape off the weld plus 1” from the weld toe on each side.

The following example shows acceptable taped off welds (before and after paint):

Figure 2: Taped off welds (before and after paint)

10.2.3. Class II Weld Requirements

The following are the Class II weld requirements unless otherwise specified on the PO or drawing/model:

- Confirm if the weldment requires post weld sandblasting, wire wheeling, grinding, or machining. When sandblast is required prior to paint, tape off the weld plus 1” from the weld toe on each side (see examples above).
- Sandblast and paint Class II welds.

10.2.4. Stress Relief Requirements

The following are the stress relief requirements unless otherwise specified on the PO or drawing/model:

- Welded assemblies, if called out on drawing or RFQ, must be thermally stress relieved. Vibratory stress relief is not permitted without prior AIT engineering approval.
- Stress relief is required after forming operations.
- Stress relief certifications are required for all weldments and must include the following

product information as applicable: tool number, subassembly number, serial numbers, quantity of each weldment, weld specification, and oven chart.

Note: When referenced on the PO, see AIT Quality Clause, **QA24 – THERMAL STRESS RELIEVE**, for additional requirements.

10.2.5. NDT Requirements

When NDT is required, the following requirements apply:

- When proof load testing is required, NDT must be performed after the proof load test
- All NDT reports / certificates must list the following information:
  - Job Number
  - Part / Tool Number
  - S/N or Unit #
  - Quantity of each weldment or tool
  - Specification
  - Material Type
  - Examination Results
  - Technician Name and Certification Level
  - Date of Inspection
  - Equipment Description
  - Equipment Serial Number
  - Particle Type and Color
  - Yoke Spacing
  - Technique Number
  - NDT Level II (or Level I working under the NDT Level II) inspector signature
  - AIT PO Number

The following example shows an AIT Magnetic Particle NDT Certificate (see next page):

Magnetic Particle Certificate

Job Number: 12345-ABCD Technique No.: 2 Date: 9/3/2024
Part Number: 12345-ABCD-02-001 Drawing No.: 75443
Specification: ASTM E1444-E1444M Acceptance Class: AWS D14.1
Item Description: WING LIFT BEAM
Procedure: WI-13-04

Welds		Other Test Items	
Weld Joint:	Fillet	Type of Item:	N/A
Weld Process:	GMAW	Processing:	N/A
Base Material:	ASTM A36, A500	Material:	N/A
Material Thickness:	APPROX .31"- .5"	Dimensions:	N/A
Weld Length/OD:	APPROX 56"	Additional Info:	N/A
Surface Condition:	Clean	Surface Condition:	N/A

PRECLEAN

Method: Spray Material: Acetone
Batch No.: N/A

EQUIPMENT

Make: Magnaflux Current: A/C Yes
Model: Y1 D/C N/A
S/N: 1117 Half Wave Rectifiec N/A
Full Wave Rectified N/A

Contacts				Amps	
	Head Stocks		Prods	Circular Shot:	N/A
	Solenoid		Coil	Longitudinal Shot:	N/A
	Clamps		Through Transmissior	Other:	N/A
X	Yoke				

Contact Material:	Steel	Cable Size:	N/A
rod/Yoke Spacing:	4"-6"	Coil/Solenoid Turns:	N/A

PARTICLES

Dry		Wet	
Type of Color:	#2 Yellow	Type of Color:	N/A
Batch No.:	19C004	Batch No.:	N/A
Vehicle:	Powder Bulb	Batch No.:	N/A
Method:	Continous X	Application:	N/A
	Residual:		

Demag Method: N/A Residual Field After Demag: N/A

POSTCLEAN

Method: Spray Material: Air
Light Intesity: >100 FC Batch No: N/A
Black Light: No White Light: Yes

OTHER INFORMATION

No defects on critical welds

Prepared By: Max Richter Approved By: Max Richter

Figure 3: AIT NDT MT Certificate

10.2.6. Common Unacceptable Weld Defect Examples

The following examples show unacceptable weld defects:

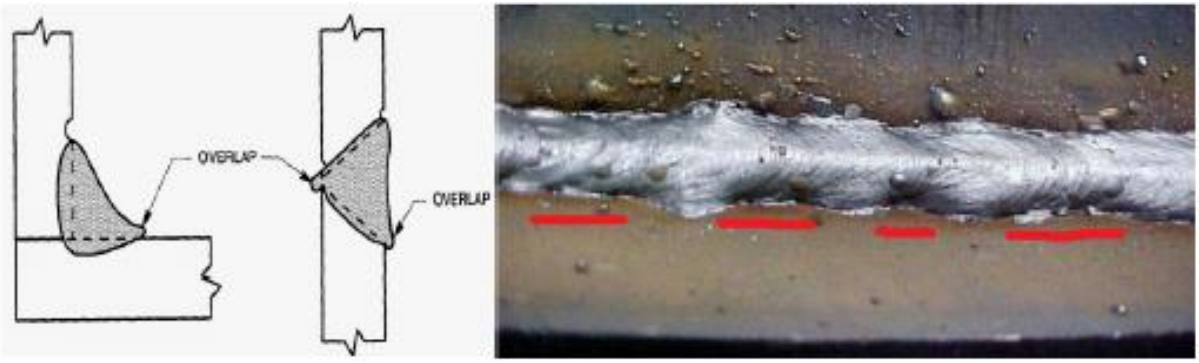


Figure 4: Overlap

Figure 5: Crater Crack

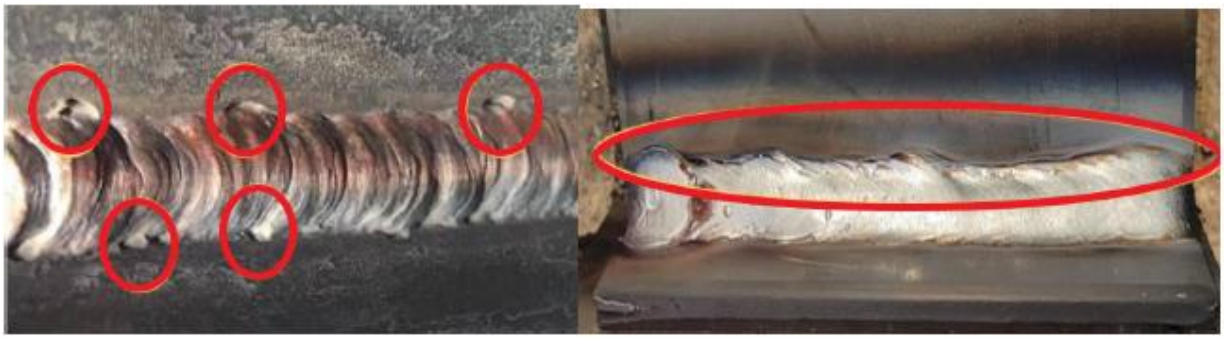


Figure 6: Undercut

Figure 7: Incomplete Fusion

10.2.7. Acceptable Weld Examples

Aluminum welds:

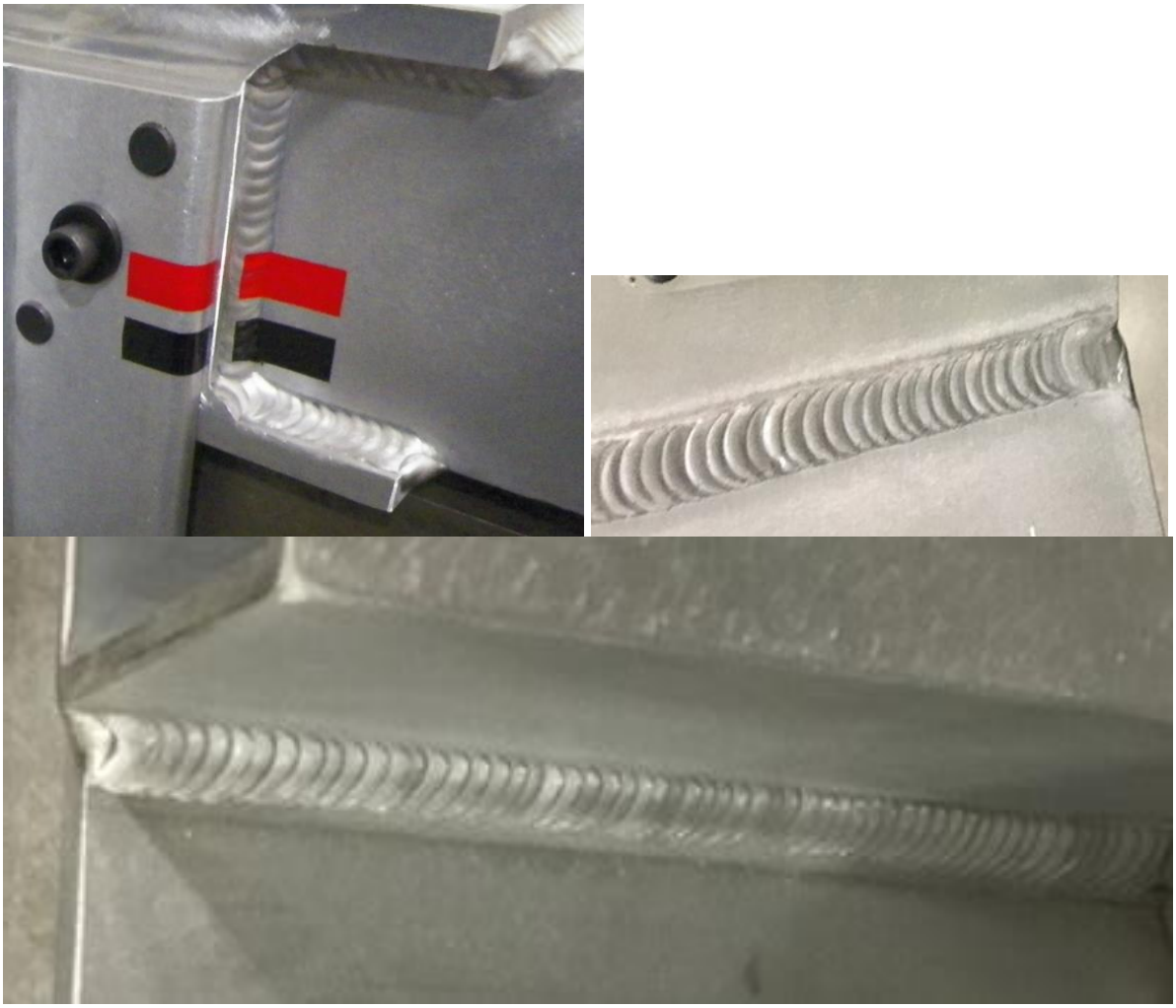


Figure 8: Acceptable Aluminum Welds

Invar welds:

Figure 9: Acceptable Invar Welds

10.3. Heat Treatment

Heat treat certifications are required for all hardened details and must include the following product information as applicable: tool number, subassembly or detail number, serial numbers, material type, quantity of each subassembly or detail number, heat treat specification name/number, and hardness requirements and the actual results.

10.4. Surface Coatings and Finishes

Paint, coating, and surface finish requirements are either called out on the drawing/model or provided as a reference on the PO. The Supplier shall not apply any paint or coating that is not specified by AIT.

10.4.1. Paint

The following are general requirements for paint:

- Do not paint over hardware and other commercial items.
- Paint is not permitted on Class 1 welds. Tape off the weld plus 1” from the weld toe on each side.
- Paint is not permitted in tapped or reamed holes, or on machined surfaces.
- Cosmetic defects, such as scratches, chips, runs/sags, thin topcoat (primer showing through), overspray, bubbles, or weld beebees or other debris under paint, etc. are not acceptable.

The following shows common, unacceptable paint defects:

Figure 10: Unacceptable Thin topcoat / primer bleed through

Figure 11: Unacceptable scratching and marring

Figure 12: Unacceptable run / sag

10.4.2. Color Matching

When paint is required, AIT will typically provide the Supplier with a paint swatch to verify that the paint color matches. The Supplier shall take photos of the color matching with the provided swatch to include as part of the final inspection package.

If AIT did not provide a paint swatch, contact the Buyer to make appropriate arrangements.

The following example shows unacceptable color matching:

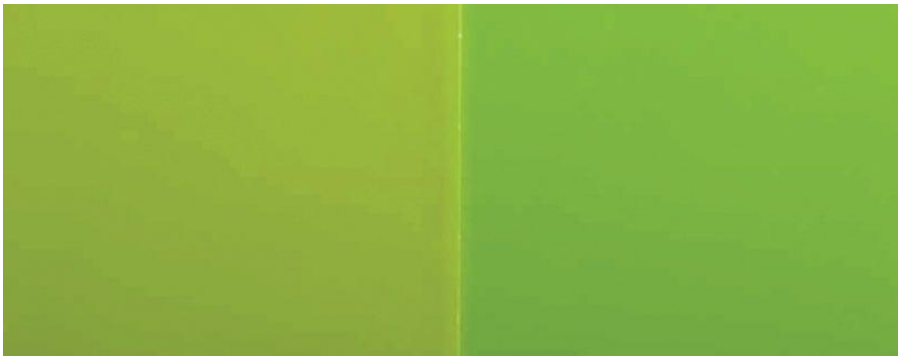


Figure 13: Unacceptable color matching

10.4.3. Surface Finish of Unpainted / Uncoated Surfaces

The surface finish of unpainted / uncoated surfaces are either called out on the drawing/model or PO. The following are general requirements for unpainted / uncoated surfaces:

- Aluminum surfaces that are not painted or machined must be jitterbugged with a nylon mesh sanding pad, to achieve a “fogged” finish. Other methods, such as tumbling, blasting, directional brushing, etc. are not acceptable without prior AIT approval.
- See section **9.1** for requirements related to machined surfaces.

Note: When referenced on the PO, see AIT Quality Clause, **QA7 – SPECIAL PROCESSES** for additional requirements.

The following example shows an acceptable jitterbug finish:

Figure 14: Acceptable jitterbug finish

11. Hardware and Attachments

11.1. Press Fit Bushings

The following are the general bushing requirements unless otherwise specified on the PO or drawing/model:

- Press fit bushings must be installed flush to below .010” of the surface.
- Verify bushings are not collapsed beyond the manufacturer’s specification.
- Honing bushing inner diameters is not permitted. If a bushing is collapsed remove and ream the hole.
- Loc-Tite and sleeved bushings are not permitted without prior AIT approval.
- It is the Supplier’s responsibility to ensure the hole is reamed in accordance with the bushing manufacturer’s recommendation, unless otherwise specified by AIT.

11.2. Bolts and Screws

Unless otherwise specified, all bolts and screws must be Grade 8 minimum (or metric Grade 12).

11.3. Cable Attached Components

The following are the general requirements unless otherwise specified on the PO or drawing/model:

- Components of removeable details, such as L-pins, hand knobs, etc., must be attached to the removeable detail so that the components remain with the detail.
- Cable attachment:
  - Assembly Jigs: Cable attach using high strength stranded wire cable with nylon coating.
  - Bond Tools: Cable attach using high strength stranded wire cable without any coating.
- Cable must be looped through holes in the material of the removeable detail and crimped with ferrules where possible. Tag end not to be past ferrules. Screws with eyelets or terminals may only be used where looped ends through holes is not possible due to tool configuration.

The following example shows an acceptable coated wire attachment:

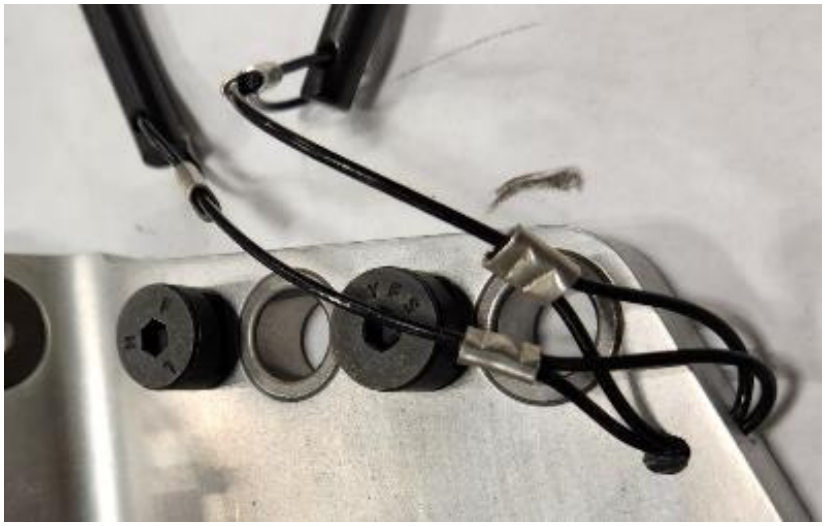


Figure 15: Acceptable coated wire attachment

11.4. Fastener Torque

The following are the general requirements unless otherwise specified on the PO or drawing/model:

- All screws should be torqued to the manufacturer's/engineering specification or use **ES-02 - AIT Engineering Specification - Torque, Lube and Loctite Usage**
- Special torque requirements:
  - Assembly Jigs: Apply tamper proof sealant to all fasteners (see section **11.5** below)
  - Bond Tools: Do not use tamper proof sealant (i.e., "torque stripe") unless otherwise specified

11.5. Tamperproof Sealant

The following are the general requirements unless otherwise specified on the PO or drawing/model:

- Hoist rings must be tamperproof sealed with tamperproof Sealant Torque verification must be witnessed by the AIT Lead Inspector.
- Structural fasteners, washers and nuts must be tamper evident sealed with high visibility sealant, depending on the customer requirements. Orange Dykem Torque Seal or equivalent can be used (see reference photo below).

Figure 16: Orange Dykem Torque Seal (for reference)

- On lift tools, torque verification must be witnessed (or otherwise verified / approved) by the AIT Lead Inspector or designee.

12. Inspection Reports

12.1. General / Inspection Report Requirements

Unless otherwise noted on the PO or drawing / model, inspection is required for:

- All 3 place or greater dimensions
- GD&T
- Minimum dimensions (e.g., 0.63 min)
- General notes
- Flag notes

Inspection reports shall be provided for all:

- Details / parts
- Subassemblies
- Assemblies
- Complete tools

All inspection reports must contain the following information:

- The inspection header must include the following product information as applicable: date of inspection, AIT PO # and line item, the tool number, subassembly or detail number, serial number(s), and engineering revision level, and inspection equipment ID (traceable to a valid calibration certificate).
- The report must include nominal values, tolerances, flag notes, and actuals results.
- Bitmaps must be included within the report and have traceability to the inspected items.
- Valid calibration certificates are required for all inspection equipment and must accompany the report, either as a separate file or as an appendix.

Note: When referenced on the PO, see AIT Quality Clauses, **QA4 – INSPECTION**, **QA5 – FIRST ARTICLE INSPECTION** and **QA18 – 100% INSPECTION**, for additional requirements.

12.2. Detail, Part, and Subassembly Inspection

The following are general requirements unless otherwise specified on the PO or drawing / model:

- When inspecting multiple quantities of the same detail, inspection data can be reported on a single inspection report by listing the total quantity and the “high and low” measurement values of each feature for the batch.
- Separate inspection reports are not required for multiple details or subassemblies that are not reported in aircraft coordinates and can be provided in any legible file format (Excel, Word, PDF, etc.)
- Detail and subassembly dimensional results are reported in the local datum system called out in the engineering data, except drill jigs and N/C blocks, which require dimensional results reported in aircraft coordinates with a .csv report.

The following example shows a detail inspection report (see next page):

AIT

Document No.	QF-13-12
Revision	B
Effective	8/17/2021

DETAIL CHECK REPORT

Inspector: M. SMITH **Date:** 10/7/2024

Job Number: 12345-ABCD **Sheet # / Rev:** 3/C

Tool Number: T1000-222-45000 **Serial Number:** 111122458 **Unit Number:** 1

Detail #	Qty.	Dimension	Tolerance	Actual Range	Gage ID#	Next Cal. Date
2180	1	DIA .406 2x	+/-.010	.4075/.4083	R06329	1/17/2025
		TRU POS .030 2x	+/-.030	.0009/.0020	FA03	3/29/2025
		DIA .344	+/-.010	.3476/.3457		
		TRU POS .030 2x	+/-.030	.0047/.0066		
		DIA .750	+/-.010	0.7495		
		TRU POS .030	+/-.030	.0009		
		PROFILE .060	+/-.030	-.0116/.0135		
		PERP TO A	.001	0.0008		
		PROFILE OF A	.001	.0000/.0003		
		TRU POS	.001 A/B	0.0008		
		PROFILE .002	+/-.001	-0.0009/0.001		
2180A	1	DIA .406 2x	+/-.010	.4037/.4056		
		TRU POS .030 2x	+/-.030	.0037/.0130		
		DIA .344	+/-.010	.3442/.3448		
		TRU POS .030 2x	+/-.030	.0047/.0079		
		DIA .750	+/-.010	0.7510		
		TRU POS .030	+/-.030	.0087		
		PROFILE .060	+/-.030	-.0056/.0093		
		PERP TO A	.001	0.0007		
		PROFILE OF A	.001	-.0002/.0002		
		TRU POS	.001 A/B	0.0009		
		PROFILE .002	+/-.001	-0.0003/0.0005		

Figure 17: AIT detail inspection report

12.3. CMS Inspection Requirements

The following are general requirements unless otherwise specified on the PO or drawing/model:

- CMS inspection reports must contain all critical holes, surfaces, pierce points, offset tooling points per design requirements, tooling balls, and laser targets.
- Inspection results for CMS operations performed in an uncontrolled environment must include scale bar measurements and actual temperature readings. Range must not exceed +/- .002
- CMS inspection results must be reported in 4-place decimal inch.
- The .csv report must contain values in aircraft coordinates reported in 4-place decimal inch. Unless otherwise specified, use column A for the point name and columns B, C and D for the X, Y and Z actual values.

The following example shows a CSV file containing the inspection data (see next page):

	A	B	C	D
1	TB_1	376.7438	-104.0514	26.1353
2	TB_2	376.7623	43.7429	26.1306
3	TB_3	376.7618	-104.046	5.8879
4	TB_4	376.7912	43.6863	5.8808
5	TB_5	258.2712	-103.9103	26.1525
6	TB_6	258.2739	43.9561	26.1498
7	TB_7	258.3169	-103.8168	5.9033
8	TB_8	258.3234	43.8978	5.9024
9	LOCK_1	253.7528	-100.0848	33.499
10	LOCK_1VP	253.7522	-100.7306	33.4978
11	LOCK_2	253.7536	39.9012	33.496
12	LOCK_2VP	253.7538	39.0505	33.5011
13	LOCK_3	381.2457	-99.8593	33.5042
14	LOCK_3VP	381.2462	-100.6641	33.5045
15	LOCK_4	381.2436	39.9027	33.5018
16	LOCK_4VP	381.2438	39.0485	33.5048
17	4WAY	253.75	50	34.1258
18	SPHERE_4	253.7545	-29.9987	34.7511
19	2WAY	253.75	-109.9985	34.1261
20	SPHERE_1	381.2514	49.9997	34.7505
21	SPHERE_2	381.2376	-29.9999	34.7524
22	SPHERE_3	381.241	-110.0016	34.7501

Figure 18: CSV file containing the inspection data

12.4. Turnkey / Complete Tool Inspection

The following are general requirements unless otherwise specified on the PO or drawing / model:

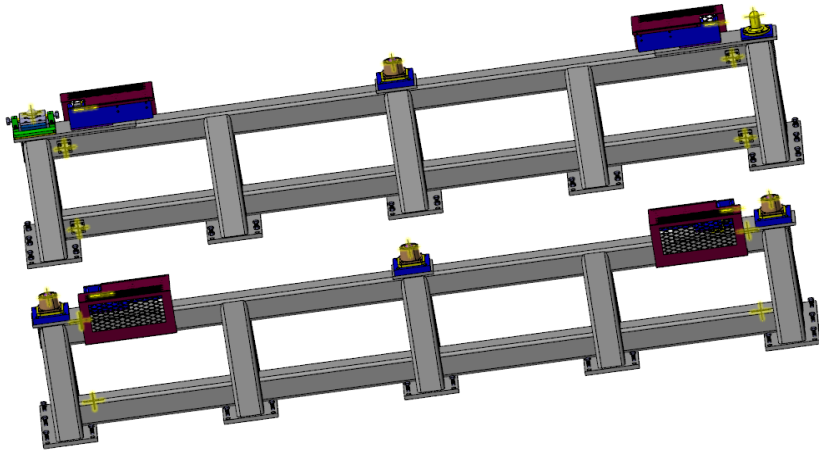
- Separate inspection reports are required in Microsoft Excel format (with an additional PDF copy) for each detail / part, subassembly, assembly, and complete tools

The following shows an example of complete tool inspection report (next several pages):

AIT | BUILDING THE FUTURE OF AEROSPACE

29700 Commerce Blvd., Chesterfield Twp., MI 48051 Web: www.aint.com Phone No: (586)749-5525 / Fax No: (586)749-5631

AITS JOB #: 12345-01-001 SERIAL #: A00001 DATE: 4/9/2025 EQUIP: Y10011034515
TOOL #: ABC00001 UNIT #: 1 INSP: BLAKE/JWH Cal Due 2/2/2026
REV : NC

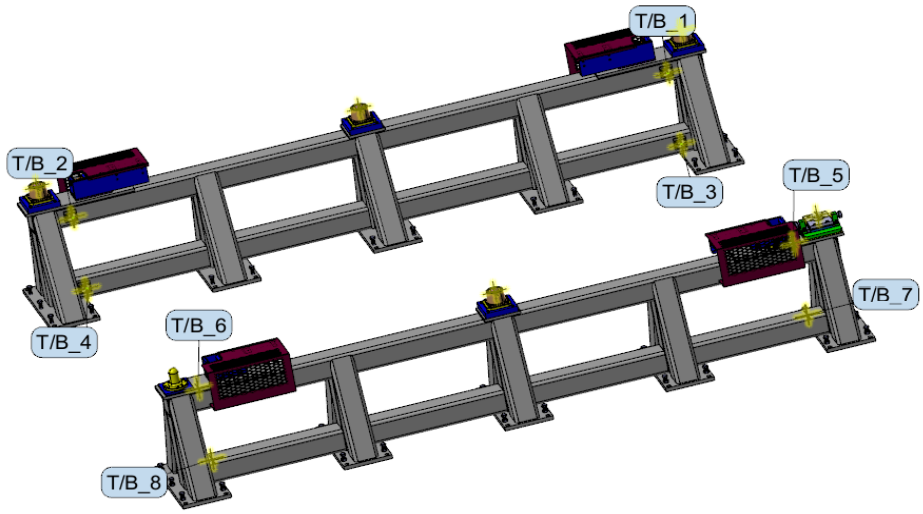


INSTALL FINAL INSPECTION

SCALE BAR BEFORE 1 - SCALE BAR BEFORE 2				
Measured	Nominal	Tol +	Tol -	Dev
38.4574	38.4572	0.0020	-0.0020	0.0002

SCALE BAR AFTER 1 - SCALE BAR AFTER 2				
Measured	Nominal	Tol +	Tol -	Dev
38.4579	38.4572	0.0020	-0.0020	0.0007

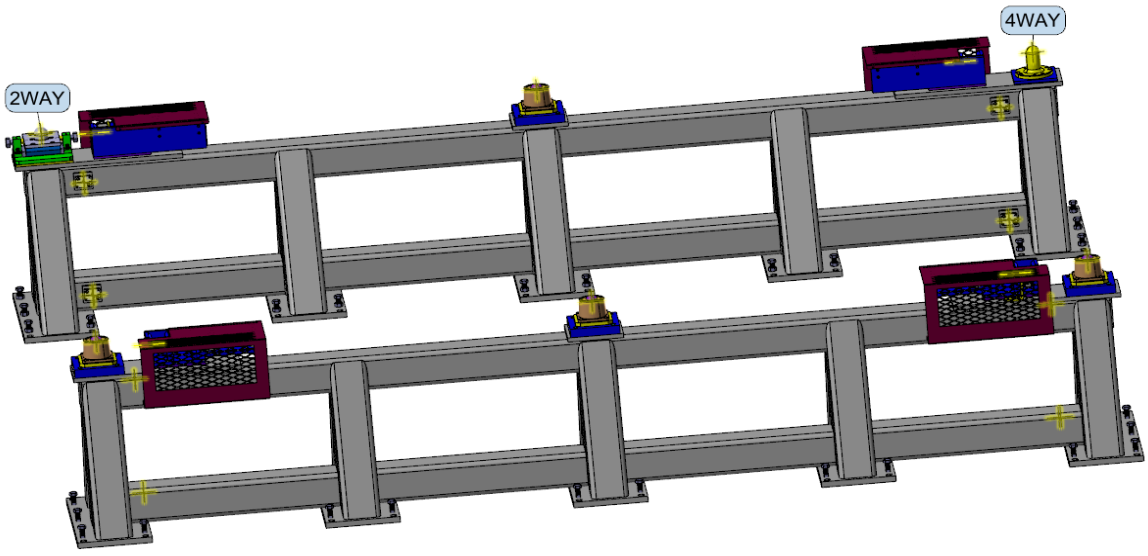
Figure 19: Complete tool inspection report showing tool information, equipment used, scale bar shots, etc.



.500 OFFSET TOOLING BALL VALUES

ID	X-ACT	Y-ACT	Z-ACT	ID	X-ACT	Y-ACT	Z-ACT
T/B_1	376.7438	-104.0514	26.1353	T/B_5	258.2712	-103.9103	26.1525
T/B_2	376.7623	43.7429	26.1306	T/B_6	258.2739	43.9561	26.1498
T/B_3	376.7618	-104.0460	5.8879	T/B_7	258.3169	-103.8168	5.9033
T/B_4	376.7912	43.6863	5.8808	T/B_8	258.3234	43.8978	5.9024

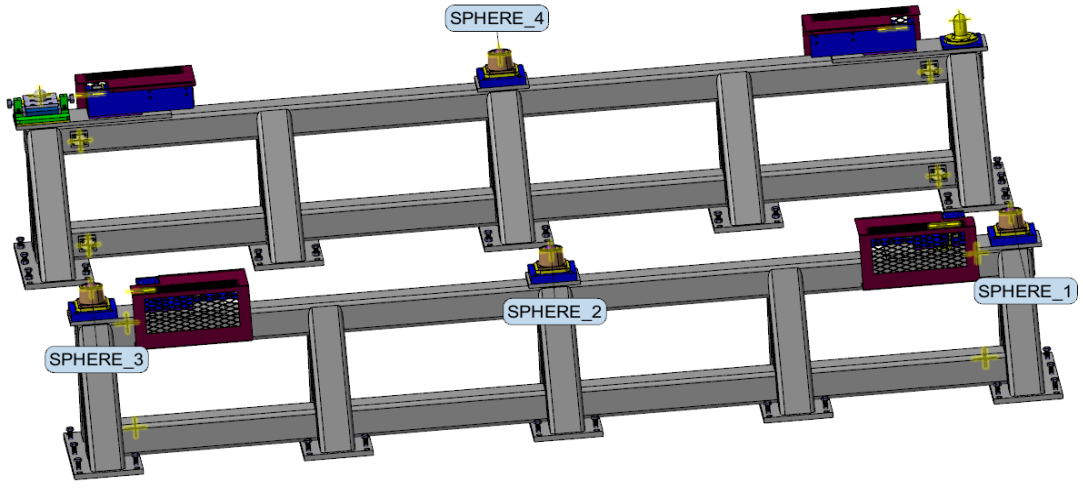
Figure 20: Inspection report shows tooling ball values



4WAY & 2WAY PINS

SHT 2									
TOL =+/- .005									
ID	***X-ACT***	***Y-ACT***	***Z-ACT***	***X-NOM***	***Y-NOM***	***Z-NOM***	***DX***	***DY***	***DZ***
4WAY_1	253.7500	50.0000	34.1258	253.7500	50.0000	34.1250	0.0000	0.0000	0.0008
2WAY_1	253.7500	-109.9985	34.1261	253.7500	-110.0000	34.1250	0.0000	0.0015	0.0011

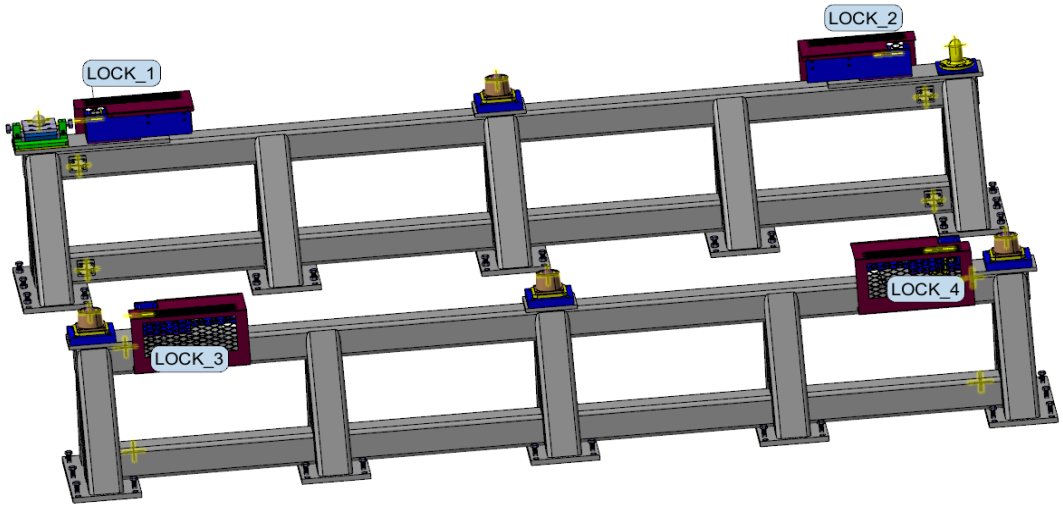
Figure 21: Inspection report shows 2 and 4-way pins



OF SPHERE'S

SHT 2							+/- .100	+/- .100	+/.005-.000
ID	***X-ACT***	***Y-ACT***	***Z-ACT***	***X-NOM***	***Y-NOM***	***Z-NOM***	***DX***	***DY***	***DZ***
SPHERE_1	381.2514	49.9997	34.7505	381.2500	50.0000	34.7500	0.0014	-0.0003	0.0005
SPHERE_2	381.2376	-29.9999	34.7524	381.2500	-30.0000	34.7500	-0.0124	0.0001	0.0024
SPHERE_3	381.2410	-110.0016	34.7501	381.2500	-110.0000	34.7500	-0.0090	-0.0016	0.0001
SPHERE_4	253.7545	-29.9987	34.7511	253.7500	-30.0000	34.7500	0.0045	0.0013	0.0011

Figure 22: Inspection report shows OF sphere values



ID	X-ACT	Y-ACT	Z-ACT	X-NOM	Y-NOM	Z-NOM	DX	DY	DZ
LOCK_1	253.7528	-100.0848	33.4990	253.7499	-100.0848	33.5000	0.0029	0.0000	-0.0010
LOCK_2	253.7536	39.9012	33.4960	253.7499	39.9012	33.5000	0.0037	0.0000	-0.0040
LOCK_3	381.2457	-99.8593	33.5042	381.2500	-99.8593	33.5000	-0.0043	0.0000	0.0042
LOCK_4	381.2436	39.9027	33.5018	381.2500	39.9027	33.5000	-0.0064	0.0000	0.0018

Figure 23: Inspection report shows lock values

13. Marking and Identification

Tool ID requirements are program specific and are listed on the PO or in drawings / models. When specific ID tags are required, the PO will indicate if AIT will either provide or give direction to the supplier to procure the tags.

Unless otherwise specified, details and subassemblies shall be identified with the detail or subassembly number with steel stamps, etching or tags. Grinding and hand scribing are not permitted.

Photos shall be taken and provided with the inspection package for each ID and marking on the tool.

Note: When referenced on the PO, see AIT Quality Clause, **QA1 – PART MARKING/IDENTIFICATION**, for additional requirements.

The following examples show various marking and ID methods:

Figure 24: Customer ID tag

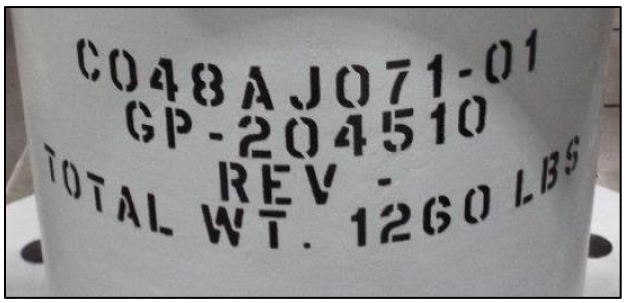


Figure 25: Stenciling

Figure 26: Stamping

14. Testing

All testing activities outlined below require an AIT witness unless other agreements have been mutually agreed within the contract (e.g., Supplier to provide photo and video evidence for AIT approval).

14.1. Proof Load Testing

Proof load diagrams are included in the engineering data and describe the procedure and the acceptance criteria.

The following outline the general requirements for proof load testing:

- Testing must be witnessed by the AIT Lead Inspector or designee
- Proof load tags and certifications must be stamped off by the AIT Lead Inspector or designee
- Post-test weld inspection
- Pictures of the test setup, testing in progress, weights on a certified scale (or calibrated weights or loading method), fixtures, and equipment
- Video of the complete test
- Where tool, subassembly, and detail numbers are required on certifications, the end customer nomenclature is also required.

The following examples show a sample of testing photos required with the inspection package:

Figure 27: Show calibrated weights or weights on a calibrated scale

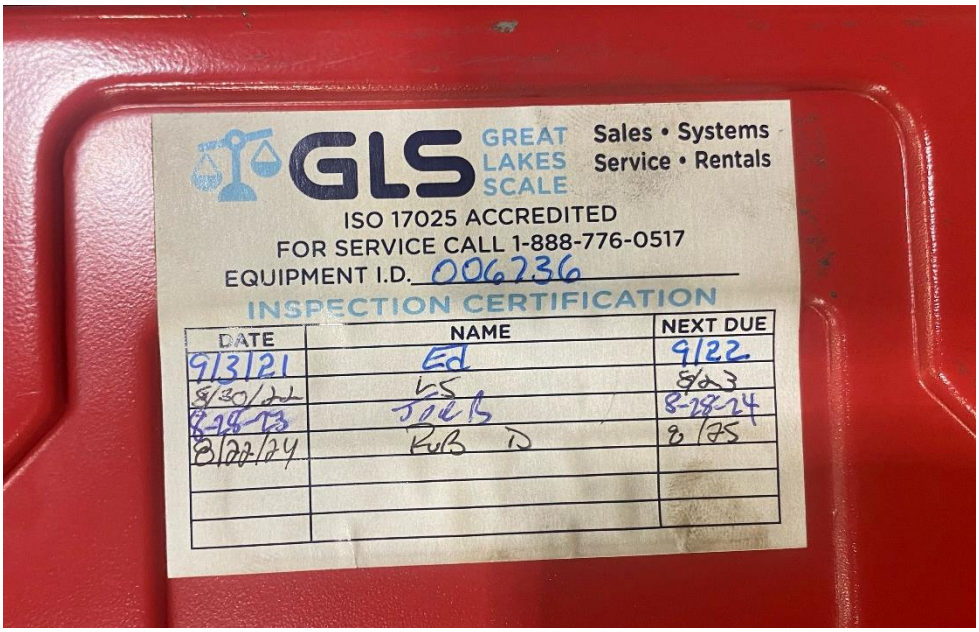


Figure 28: Show calibrated equipment and calibration stickers

Figure 29: Show test fixtures and manufactured items used to simulate part weight (see unpainted steel weldment)

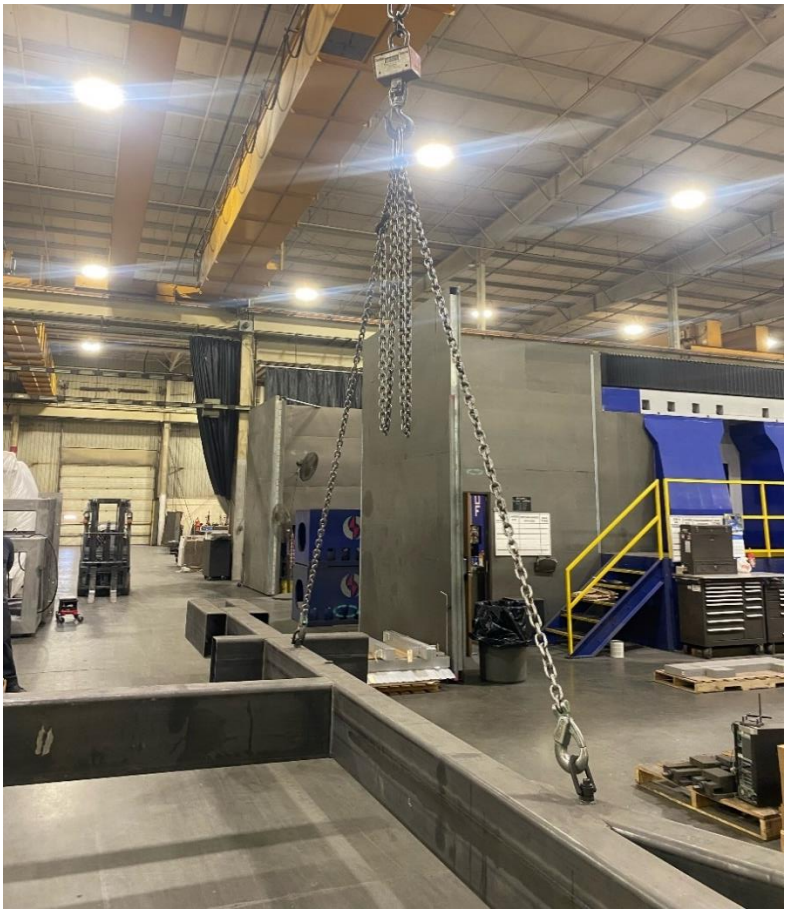


Figure 30: Show simulated part and resulting weight on a calibrated scale or load gage

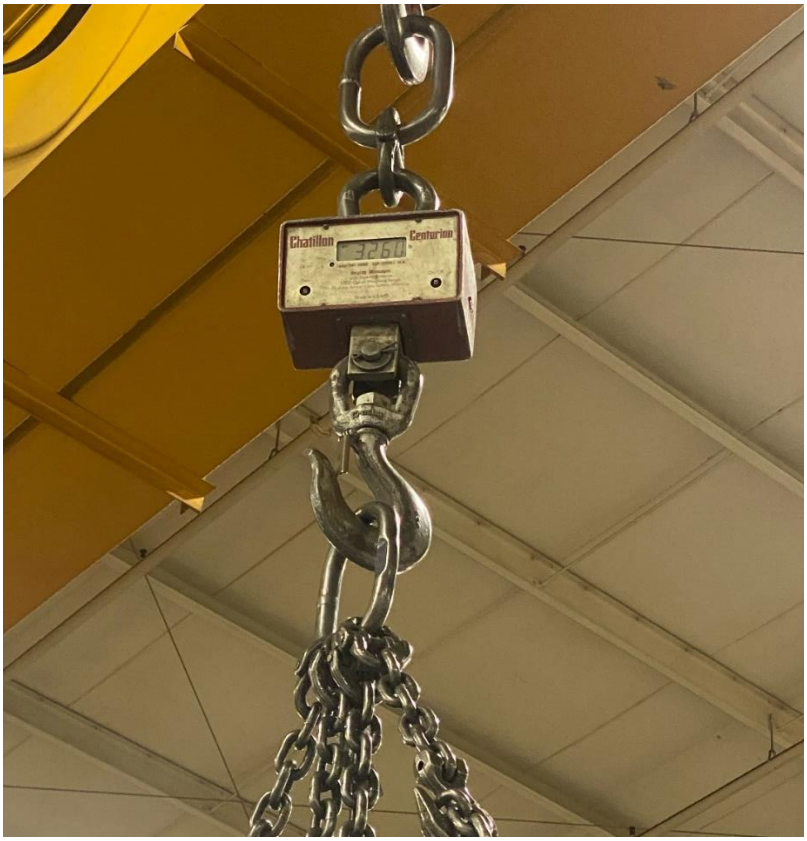


Figure 31: Show measurement of the simulated part weight


Figure 32: Provide multiple photos of the full test (only a small sample of expected photos are shown)


Figure 33: Provide multiple photos of the full test (only a small sample of expected photos are shown)

14.2. Vacuum System Integrity Testing

Vacuum system integrity testing requirements are either listed on the PO or the model / drawing. AIT will provide a test specification either from AIT's customer or AIT's own internal specification, **WI-13-10 - Vacuum Integrity Testing**.

The following outline the general requirements for vacuum system integrity testing:

- Testing must be witnessed by the AIT Lead Inspector or designee
- Pictures of the test setup, testing in progress, vacuum system, fixtures, and equipment
- Video of the complete test
- Where tool, subassembly, and detail numbers are required on certifications, the end customer nomenclature is also required.

The following examples only show a small sample of test photos required for the inspection package:

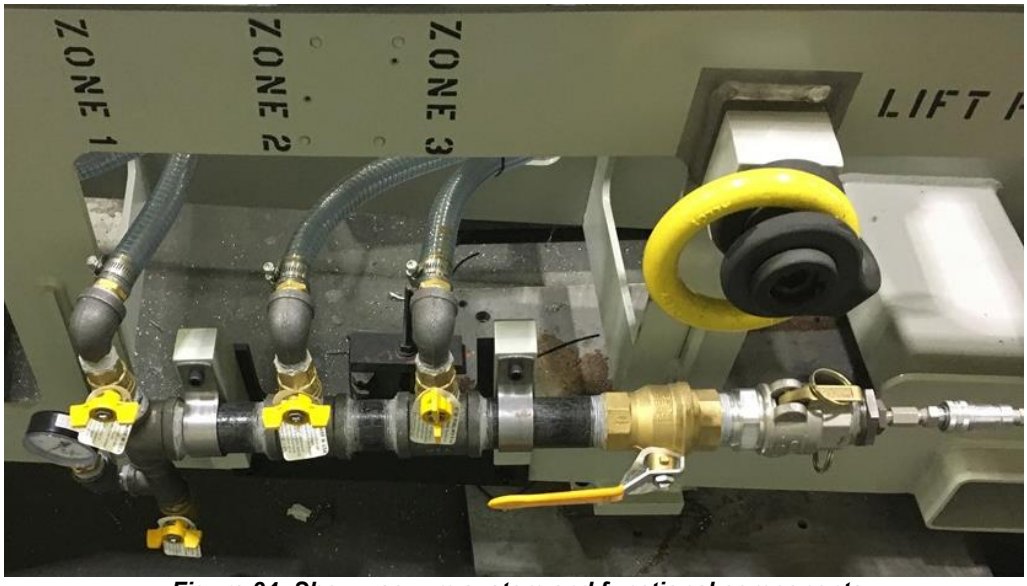


Figure 34: Show vacuum system and functional components

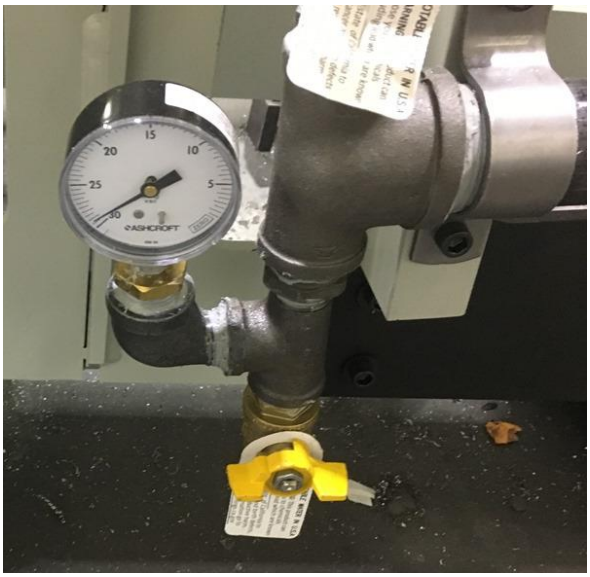


Figure 35: Show vacuum system and functional components

Figure 36: Show vacuum bag under vacuum at various points throughout the full test

Figure 37: Show recorded calibrated gage values throughout the full test

14.3. Functional Testing

Functional testing requirements are either listed on the PO or the model / drawing. When applicable, a functional test plan will be provided by AIT.

The following outline the general requirements for vacuum system integrity testing:

- Testing must be witnessed by the AIT Lead Inspector or designee
- Pictures of the test setup, testing in progress, functional components and systems, fixtures, and equipment
- Video of the complete test when applicable (may be only applicable for specific tests within the test plan)
- Where tool, subassembly, and detail numbers are required on certifications, the end customer nomenclature is also required.

15. Product Buy-Off

15.1. Inspection Package Contents

The following are common documents that are required for various types of tooling:

Category	Items	Expected Documentation
Purchased	**Raw Material**	Verified Material Certificate / Test Report
	COTS / Purchased Items	Original OEM paperwork, Shipper
	Calibrated Equipment	Original OEM paperwork, Calibration Cert
Manufactured	**Details, Parts, and Subassemblies**	Detail Inspection Report
	Turnkey Tools and Assemblies	Final Assembly Inspection Report and CVS Data
Use of Calibrated Equipment	**Load Cells, Scales, Weights**	Valid Calibration Certificate
	CMS Equipment, Scale Bars	
	Measurement Gauges	
	Test Equipment	
	Welding Machines	
	Calibrated Tools, Torque Wrenches	
Special Processes	**Welding**	Certified Welder Certificates, WPS, Weld Certificates
	NDT	CWI Certificate, NDT Certificate
	Paint / Coating	Coating Thickness Certificate
	Stress Relief	Stress Relief Report / Certificate with Thermal Chart
	Heat Treatment	Heat Treatment Report / Certificate with Thermal Chart
Use of Chemicals	**Any chemical used in the manufacturing of the product**	MSDS Sheets
Testing	**Proof Load**	Proof Load Certificate, Pictures of Test Setup, Pictures of Load Applied, Photos of Calibrated Equipment (or if using uncalibrated weights, a photo of the weight on a calibrated scale), Video of Test
	Vacuum System Integrity	Vacuum System Integrity Certificate, Pictures of Test Setup, Photos of Calibrated Equipment, Video of Test
	Functional	Functional Test Report, Pictures of Test Setups, Photos of Calibrated Equipment, Video of Tests
General	**CofC**	CofC with authorized approval signature and/or stamp
	Tool Pictures	ID/marking, Grain Direction (when applicable), Color Matching, Testing, Final Tool, Packaged Tool, and packaged product secured on the truck

15.2. Final Tool Photos

Final tool photos must be taken and provided with the inspection package. The following types of photos are required (but not limited to):

- Overall tool from various angles
- Major components
- Details
- Features (e.g., functional components, critical interfaces / clearances, locating features, lift points, removable details, etc.)
- Other mechanical, electrical, hydraulic, and pneumatic components / systems, etc.

The following examples only show a small sample of photos required for the inspection package:

Figure 38: Show multiple angles of the overall tool


Figure 39:Show major components

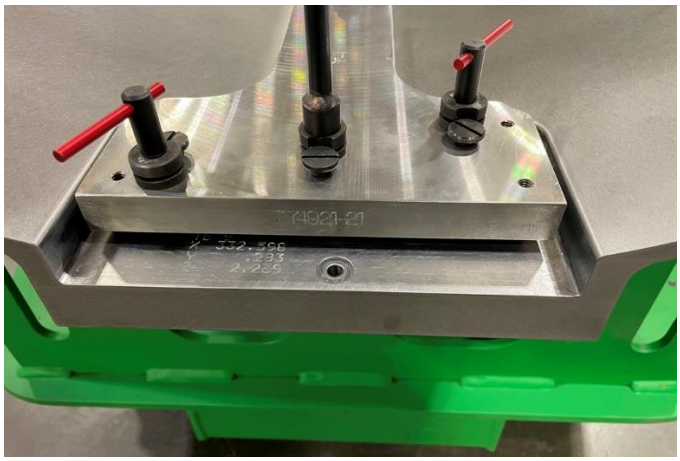



Figure 40: Show details


Figure 41: Show features (e.g., functional components, critical interfaces / clearances, locating features, lift points, removable details, etc.)

15.3. Inspection Package File Naming and Structure

Separate packages are required for each turnkey tool or PO. Where several details are on the same certification, separate copies are not required for each; include the detail numbers in the filename.

The following example shall be used to organize and name files submitted to AIT:

- Include a PDF copy of AIT's Authorization to Ship as a separate file and rename the file to include description and the PO # (e.g., Authorization to Ship - PO1192908.pdf).
- Store all documents within a zip file and rename the file with the tool ID, description, revision level, and creation date (e.g., 111478554 - WHT 001 - REV A - 02-20-2025.zip).
- Within the zip file, name and use subfolders for each major document type included in the package (see example below):

Inspection Reports

111478554 WHT 001_REV.A_02-20-14_TIR.xls
111478554 WHT 001_REV.A_02-20-14_TIR.pdf
111478554 WHT 001_REV.A_02-18-14_TrackerReport.xls
111478554 WHT 001_REV.A_02-18-14_CSV.csv
Laser Tracker ID345 Calibration Cert.pdf
Scale Bar ID562 Calibration Cert.pdf

Material Certs

111478554 WHT 001_MatlCert_Details 0007 0008 0009.pdf
111478554 WHT 001_MatlCert_Detail 1004.pdf

Heat Treat Certs

111478554 WHT 001_HeatTreatCert_Detail 1004.pdf
111478554 WHT 001_HeatTreatCert_Details 1087 1088.pdf

Weld and Stress Certs

111478554 WHT 001_ Weld Cert Sub Assy 0007 0008 0009.pdf
111478554 WHT 001_StressCert_SubAsms 0007 0008 0009.pdf
111478554 WHT 001_Weld NDT Cert Sub Assy 0007 0008 0009.pdf

Proof Load Test

111478554 WHT 001_ Proof Load Test Report.pdf
Load Cell ID 12345 Calibration Cert.pdf
111478554 WHT 001_ToolPics – Proof Load Test.pdf
111478554 WHT 001_Video – Proof Load Test.mp4

Tool Pictures

111478554 WHT 001_ToolPics – Final Tool Pictures.pdf
111478554 WHT 001_ToolPics – Packaging.pdf

15.4. Inspection Package Submission

The following outlines the standard data and information required to be submitted to receive ATS:

- Prior to shipment, all products must be approved by AIT to receive ATS. Inspection packages must be submitted no later than 72 hours prior to the planned ship date.
- Email the entire inspection package to miccerts@aint.com (or secure / encrypted file transfer, when applicable). Include the AIT PO and line item number the in subject line of email. AIT QA will review the inspection package and address any issues directly with the supplier.
- Details, parts, and subassemblies are generally approved via email after review of the inspection package. Pictures of details and subassemblies are required for verification of

proper surface finish, paint, black oxide, identification, and overall cosmetic appearance. If further evaluation is needed, AIT QA will contact the supplier to make arrangements for additional documents, pictures, or a Lead Inspector will coordinate an on-site source inspection.

- Turnkey products require on-site source inspection. After review of the inspection package, the AIT Lead Inspector will coordinate the source inspection with the supplier's Quality department. In-process and final tool assembly pictures may be requested prior to on-site source inspection. The AIT Lead Inspector will take pictures at source inspection.
- Source inspection may include witnessing CMS inspection. Scale bar checks are required for CMS inspection performed in an uncontrolled environment.
- AIT reserves the right to witness factory acceptance testing, lift ring torque verification, proof load testing, vacuum system integrity testing, functional testing, etc.
- Formal source inspection requests must be submitted at least two days prior to source inspection date requested.

Note: When referenced on the PO, see AIT Quality Clause, **QA19 – ADVANCED INTEGRATION TECHNOLOGY SOURCE INSPECTION**, for additional requirements.

16. Packaging, Marking, and Shipping

16.1. General Requirements

These requirements reflect what AIT considers good practices to protect and control items being delivered and are not intended to supersede or conflict with any packing and packaging requirements contained in an item's design information or otherwise contained in the AIT Purchase Order.

General: Materials shall be packaged in a manner that will prevent damage and preclude moisture, foreign matter or contamination damage. When multiple items are to be shipped in a package, the items will be individually packed or wrapped in a manner to prevent damage due to contact with other items.

Marking, labeling, and identification must be extended to the lowest level of unit packaging and shall be sufficiently clear to identify the contents of the package.

Bare metal material having surface protective treatment such as plating, painting, anodizing, conversion coating, etc., shall be wrapped separately in chemically-neutral paper or equivalent to prevent damage to the coating.

Note: When referenced on the PO, see AIT Quality Clauses, **QA2 – PACKING/PACKAGING**, **QA8 – SURFACE TREATMENT AND MASKING**, and **QA20 – SHIPPING INSTRUCTIONS**, for additional requirements.

The following examples show a sample of packaging photos required with the inspection package:

Figure 42: Show loose items included in the shipment

Figure 43: Show each stage of packaging to protect the product during transport

Figure 44: Show the package secured to the truck

Revision History

Rev.	Date	DCC	Comments	Approved By
0	10-16-2025	DCC0000147	Initial Release	Robert Chianese