

April 30, 2014

First Article Inspection Reports



Purpose of the Training

- Assure that everyone understands the AS9102 requirements and what is expected when completing or reviewing the forms.
- Review common mistakes made during the preparation and review of the AS9102 FAIR.



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May 27, 2014

Applicability

- A FAIR is not required for:
 - Standard Catalog Hardware
- A FAIR is required for:
 - Top Level Assemblies
 - Sub-Assemblies
 - Detail Parts
 - Castings & Forgings
 - Source Control Drawings
- A FAIR may be required for:
 - Customer drawings depending on purchase order requirements.



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AS9102 Requirements

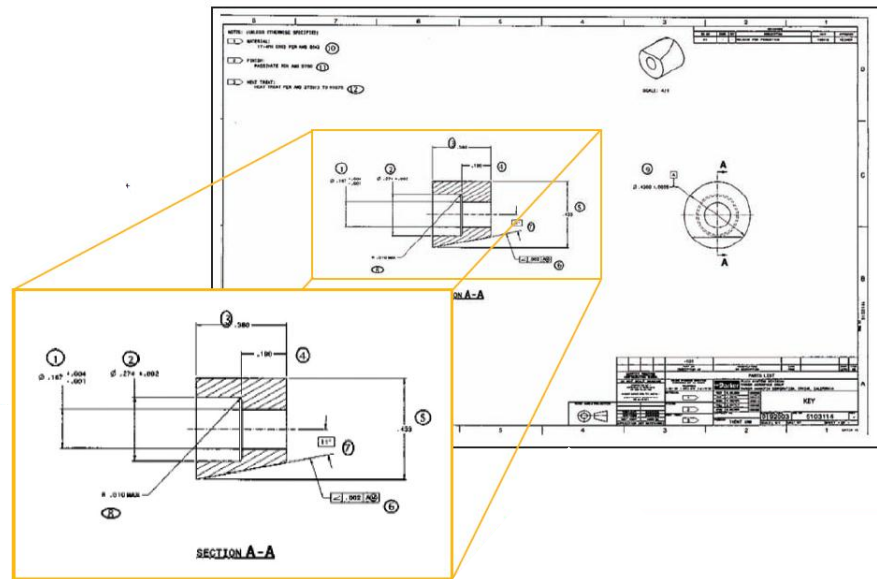
From AS9102:

- **Paragraph 5.3** The organization shall perform a full FAI, or a partial FAI for affected characteristics, when any of the following events occurs:
 - A change in design affecting fit, form, or function of the part
Any drawing revision letter change requires a new first article or delta to the new rev.
 - A change in processes, machines, programs, natural disasters, etc.
It is supplier's responsibility to submit new FAIRs
 - A lapse in production for 2 years
Not every 2 years, but 2 years without producing parts



Documentation

- Document Package Contents:
 - Minimum Requirement:
 - Completed Forms 1, 2, & 3
 - Ballooned Drawing



Helpful Tips/Reminders

- If standard hardware appears on the BOM list on the drawing, enter the part number and name on Form 1.
- Old versions of FAIRs can be used as a baseline to complete AS9102 FAIRs.
- Dimensions AND Notes are required on Form 3.
 - Notes must be fully typed.



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Form 1:

14. Full FAI	<input type="checkbox"/>	Baseline Part Number including revision level
Partial FAI	<input type="checkbox"/>	
Reason for Partial FAI:		

- If you check “Partial FAI” it is required that you complete:
 - Reason for Partial FAI
 - Example: Update from Rev. C to Rev. D
 - Also include FAI number of previous FAIR
 - Baseline Part Number including revision level
 - Part number and revision to link partial FAI to Full or Partial previous FAIR

14. Full FAI	<input type="checkbox"/>	Baseline Part Number including revision level
Partial FAI	<input checked="" type="checkbox"/>	
2002011-101 Rev. C		



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Form 1:

- Field 19:
 - Must print name AND sign/stamp

1) Signature indicates that all characteristics are accounted for; meet drawing requirements or are properly documented for disposition.	
2) Also indicate if the FAI is complete per Section 5.4: <input type="checkbox"/> FAI complete <input type="checkbox"/> FAI not Complete	
19. Signature	20. Date
21. Reviewed By	22. Date
23. Customer Approval	24. Date

Form 2:

5. Material or Process Name	6. Specification Number	7. Code	8. Special Process Supplier Code	9. Customer Approval Verification (Yes/No/NA)	10. Certificate of Conformance number

- Must include Form 2 in FAI Package even if Fields 5-10 are N/A.
- Materials/Processes listed in Fields 5-10 are only those items listed on drawing.

NOTES: (UNLESS OTHERWISE SPECIFIED)
 INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M-1982

 FINISH:
 CHEM FILM PER MIL-C-5541 CLASS 3

5. Material or Process Name	6. Specification Number	7. Code	8. Special Process Supplier Code	9. Customer Approval Verification (Yes/No/Na)	10. Certificate of Conformance Number
CHEM FILM	MIL-C-5541		EMBEE	NA	882910

Form 2:

- If drawing lists a Functional Test Procedure then you must include it in Field 11. Also add the revision of the test.

6. ACCEPTANCE TEST PROCEDURE PER ATP5080028

11. Functional Test Procedure Number	12. Acceptance report number, if applicable

11. Functional Test Procedure Number	12. Acceptance report number, if applicable
ATP5080028 Rev. C	M500841555



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Form 3:

- Drawing Requirement & Results:
 - Requirements with 2X
 - Result should show a range of results or several measurements.

8. Requirement	9. Results
3X .175 +/- .010	

Acceptable Results:

.174, .177, .176

.174 - .177

.174 / .177 / .176

.174 TYP

(if all results are the same)



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Non-Conformance Handling

- Example: Diameter is oversized.
 - Check “FAI Not Complete” on Form 1
 - Record MDNR number in Field 11 on Form 3
- FAIR is not complete until Organization:
 - Closes all non-conformances

: FAI complete FAI not Complete



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Non-Conformance Handling

- Once MDNR is closed . . .
 - Complete a Partial FAIR for the affected characteristics and record the results
 - Check “FAI Complete” on Form 1
 - State the reason for the Partial FAIR in Field 14 on Form 1



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Notes and Certifications

12/02/2008 10:27 FAX 072 276 8844

Material Cert # 5218

002 Pg 1 of 1

CERTIFICATE OF CONFORMANCE

A. Purchase Order/Contract Data		
1. PO No: 2543	2. PO Rev No.	3. PO Line Item:
4. PO No. 309250	5. Contract Amendment No.	
B. Supplier/Source Information		
6. Supplier: Seno Mfg		7. Supplier Address (Street/City/State): [REDACTED]
8. Source of Origin: Street: N/A City: N/A State: N/A		CAUTION: The suppliers shall take all necessary actions and precautions to assure that this Certificate of Conformance (C of C) is accurate, complete, and true, regardless of the actual source origin.
C. Applicable Requirements		
9. Code/Standard No:		Revisions/Editions/Addendum:
10. Specification No:		Revisions/Editions:

02/25/2003 11:58 0147793225

Finish Cert # 5143

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- Certificates of Conformance (CoC) to required specifications

- Material Certificates to required specifications

TEST REPORT -4641

Assured Testing Services
224 River Road Ridgway, PA 16833 USA
Ph: (814) 773-2214 Fax (814) 773-3285
www.assuredtesting.com

CLIENT

BILL TO: 07801 [REDACTED] USA City: [REDACTED] State: PA	CLIENT Supplier Code: [REDACTED]	SHIP TO: 07801 [REDACTED] USA City: [REDACTED] State: PA	CLIENT Supplier Code: [REDACTED]
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Test Report: 4641 Entry Date: Tuesday, February 11, 2003 Contact: Gary Lewis PO#: 2622

Test Remarks:

PART NUMBER	LOT NUMBER	SS	SAMPLE DESCRIPTION
TEST SPECIFICATION NAME	TEST PROCEDURE NAME	TEST DATE	TEST DATE
TEST RESULTS	TEST DATE	TEST DATE	TEST DATE
Added Cover Components	TEST DATE	TEST DATE	TEST DATE
ML-071-044 Class 2	TEST DATE	TEST DATE	TEST DATE

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Notes and Certifications

- Verify that certifications are provided to address the complete requirement of the note
- If specification on the note has been obsoleted by another specification, FAIR entry needs to show linkage between new and old specification



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Ballooned Drawings

- A ballooned drawing is required to support Box 5 of Form 3.
- Identify 100% of characteristics (not Reference or Basic dimensions).
- Balloon and number all dimensions and drawing features.

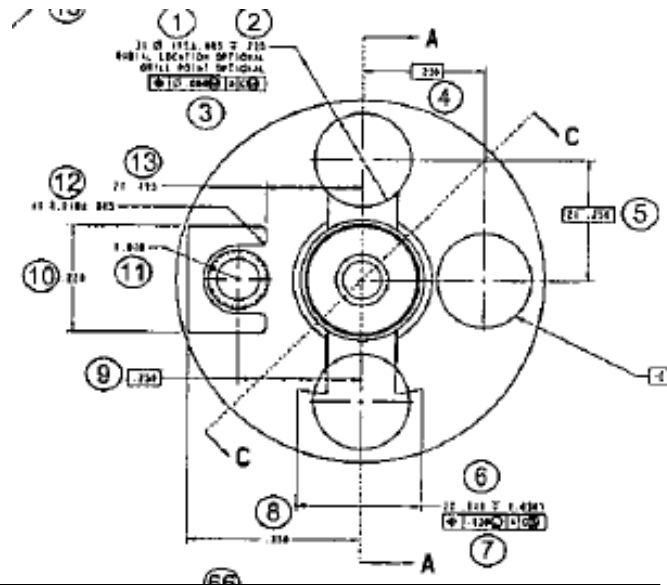


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Ballooned Drawing

- Must be included with every first article
 - a) The Ballooned drawing is not an AS9102 requirement
 - b) It IS an ITT AC requirement
 - c) All notes and dimensions must be ballooned



Customer Special Requirements

- If Customer Special Requirements are applicable, then QE/Final Inspection will communicate requirements.

Common Mistakes

- All materials and processes not included on form 2

5. Material or Process Name	6. Specification Number	7. Code	8. Special Process Supplier Code	9. Customer Approval Verification (Yes/No/NA)	10. Certificate of Conformance number
CASTING 5833240-101	C3550-T61 AL	N/A	PARKER FURNISHED	Y	M500617929
PENETRANT INSP	ES1-9	N/A	ANAPLEX PARAMOUNT, CA	Y	194721
ANODIZE	MIL-A-8625	N/A	ANAPLEX PARAMOUNT, CA	Y	194721
ALODINE	MIL-C-5541	N/A	ANAPLEX PARAMOUNT, CA	Y	194721
ABLATIVE COATING	EPS2810218	N/A	MICRON MACHINE COMPANY POWAY, CA	Y	M7229A



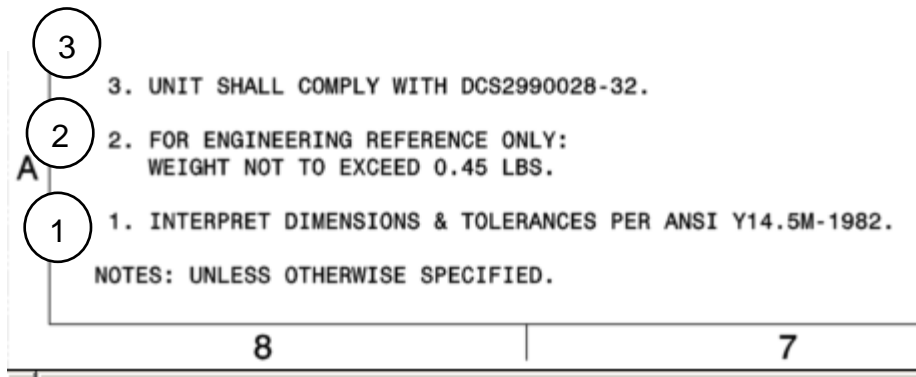
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Common Mistakes

Missing Notes

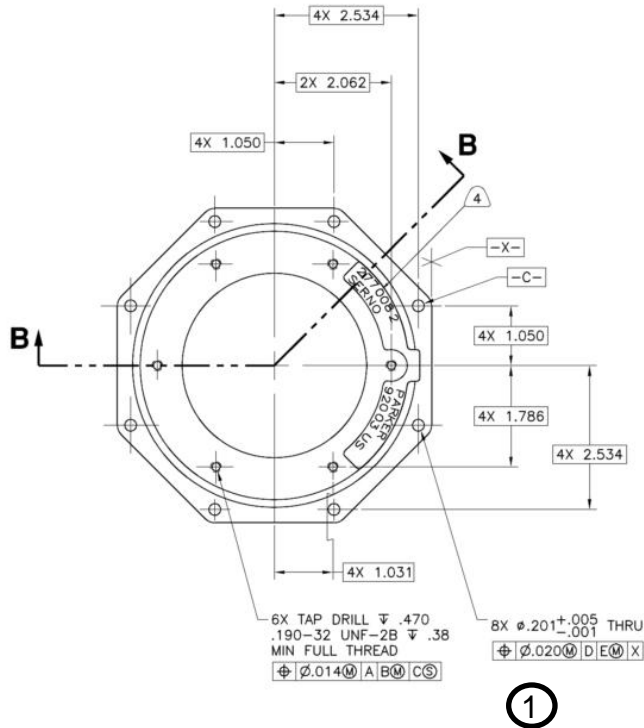
Notes must be verified on Form 3 and bubbled on the drawing just like dimensions



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Common Mistakes



Dimensions listed as 2x (or more)

Either:

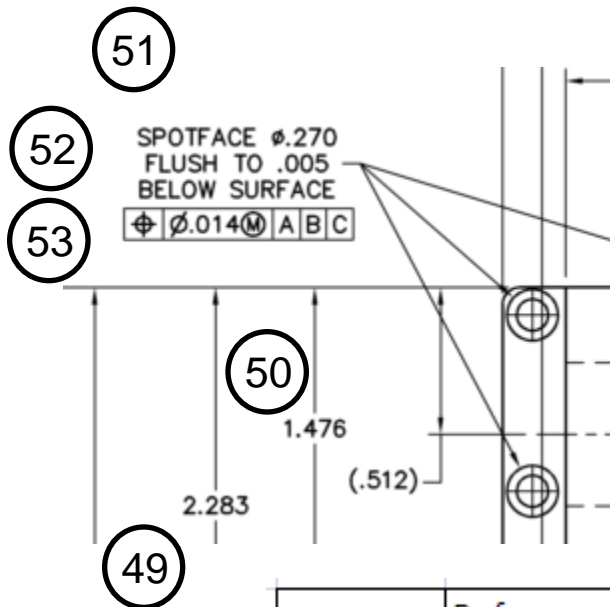
- a) Each measured dimension
- b) The range low to high

Char No.	Reference Location	Characteristic Designator	Requirement	FAI Results
1	G5	Critical	8X ϕ ϕ .020 M D E M X	.016, .019, .019
cont				.016, .004, .013
cont				.012, .010

OR

Char No.	Reference Location	Characteristic Designator	Requirement	FAI Results
1	G5	Critical	8X ϕ ϕ .020 M D E M X	.004 to .019

Common Mistakes



Not including all features in a callout

- Basics and Reference Dimensions are not recorded.

Char No.	Reference Location	Characteristic Designator	Requirement	FAI Results
51	H4	Minor	3X SF Dia .270 (+/- .010 default)	.265, .265, .268
52	H4	Minor	3X Flush to .005 below	.004, .005, .003
53	H4	Minor	3X $\oplus \varnothing .014 \text{ M A B C}$.001, .001, .001

Common Mistakes

- Results listed are not within tolerance range
 - Example: Requirement = $3.250 \pm .001$
Result = 3.253
 - Out of tolerance condition

Things to Remember

- Take your time.
- When reviewing a FAIR, there are mistakes, find them.
- If you are not sure about something when reviewing or completing a FAIR, ask someone.
- Make sure the copy of the certs provided are consistent with the Lot # provided on the FAIR.
- Documents must be correct. They are reviewed by your Customer and your Customer's Customer.



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Forms Link

AS9102 A forms can be downloaded at:

www.sae.org/aaqg/publications/as9102a-faq.htm

9102 FAQ Link

www.sae.org/iaqg/publications/faq9102.htm