

First Article Inspection Tracker

How-to guide: what the workbook does, how to use it and what every number means.

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First Article Inspection Tracker

Record every first article and each ballooned characteristic, and see which FAIs are open or overdue, which failed, and which characteristics sit near their limits.

For: Quality engineers, inspectors and quality managers at machine shops, aerospace and medical device suppliers who run first article inspections.

Version 1.0.0 · updated 15 October 2026

Quick start

1. On Setup, set the status date, the due-soon window, the near-limit share, your pass target and the time standards, then replace the example customers, reasons, categories and inspectors.
2. On FAI Register, add one row per first article: FAI number, part, revision, customer, reason, full or partial, inspector and planned date.
3. On Characteristic Results, add one row per ballooned characteristic: number, description, category, unit, nominal and tolerances; then type each measured value (or the attribute result) and the gauge.
4. Type the completed date on the register when the FAI is finished; read the Check columns and fix anything that is not OK.
5. Move the status date forward and open the Dashboard for open, overdue and failed FAIs and the characteristics near their limits.

What is in the workbook

Start Here	Read this first: what the workbook does and how to use it.
Setup	Status date, due-soon window, near-limit share, your pass target, time standards, and the customer, reason, category and inspector lists.
FAI Register	One row per first article: part, revision, customer, reason, dates. Counts, result and time come from the results.
Characteristic Results	One row per ballooned characteristic: requirement, measured value or attribute result, gauge. Limits and result are calculated.
Dashboard	Open, overdue and failed first articles, measured progress, and characteristics that failed or sit near a limit.
Method	How every number is calculated, with assumptions, limits and sources.
Verify	Self-check: the workbook's formulas recomputed on fixed inputs against an independent reference.

What each number means

Quantity	How it is calculated	Units
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Quantity	How it is calculated	Units
LSL, USL	Nominal + lower tolerance; nominal + upper tolerance. A blank lower tolerance means an upper limit only (position, flatness, runout, Ra), with 0 as the natural floor.	char. unit
Deviation	Measured - nominal.	char. unit
Tolerance used	Two limits: $ \text{measured} - (\text{LSL} + \text{USL}) / 2 / ((\text{USL} - \text{LSL}) / 2)$, so 0% is mid-band and 100% is at a limit. Upper limit only: measured / USL.	%
Result (characteristic)	Attribute: PASS when Conforms, FAIL otherwise. Variable: Not measured while blank; FAIL below LSL or above USL; else PASS.	-
Near limit	1 when a PASS reading's tolerance used is at least the Setup near-limit share.	count
Characteristics, measured, nonconforming	Results rows for the FAI; those with PASS or FAIL; those with FAIL.	count
Result (FAI)	FAIL if any characteristic fails; In progress while any is not measured; PASS when all are measured and pass.	-
Due status	Complete when the completed date is typed; else Overdue after the planned date, Due soon within the window, otherwise OK.	-
Est. time	Characteristics x minutes per characteristic + setup and fixturing + planning and reporting (Setup): the First Article Inspection Time calculator's formula.	min
Completed FAIs passed	Completed FAIs with result PASS / completed FAIs with characteristics.	%
Measured, open FAIs	Characteristics with PASS or FAIL on open FAIs / all characteristics on open FAIs.	%

Assumptions, limitations, sources and the self-check (the Verify sheet, which recomputes the workbook's formulas on fixed test inputs) are in the workbook. The last page shows the Dashboard with the example data for Corvane Precision, a fictional business.

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Engineering estimates for planning and improvement work. Verify the results against your own process, data and standards before you rely on them.

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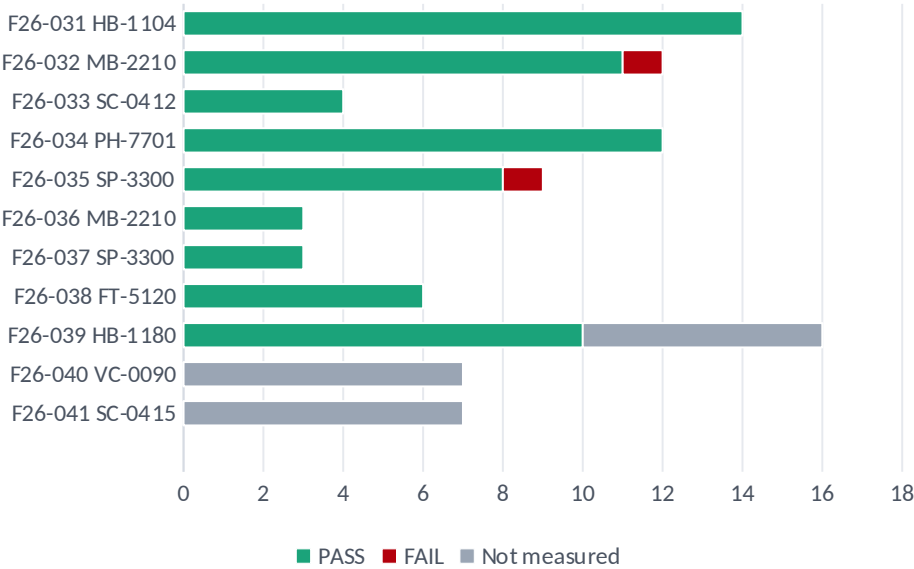
Open, overdue and failed first articles, measured progress, and characteristics that failed or sit near a limit.

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Status date 9 Oct 2026: 11 FAIs and 93 characteristics on the logs.

OPEN FAIS	FAIS OVERDUE	MEASURED, OPEN FAIS	COMPLETED FAIS PASSED
3	1	33.3%	75.0%
No completed date yet	Limit 0	Characteristics with a result	Target 90.0%
	Above target		Below target

Characteristic results by FAI



Findings by characteristic category

