

DFMEA Review Report

File: gearbox-housing-dfmea.xlsx

Date: May 20, 2026

Request ID: sample-report-dfmea

3 Major	4 Minor	2 OFI
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Findings

F-001 · D-001b · AIAG-VDA §1.4.1, §2.4

Row 14 · Failure Cause

"Bearing supplier delivers housing bore machined out of tolerance"

● **MAJOR**

The stated cause describes a supplier execution failure, not a design characteristic. AIAG-VDA §2.4 requires causes to reference design parameters that the design team controls. A supplier-blame cause cannot be acted on in design review and will be flagged in an OEM audit.

→ Rewrite as a design cause: "Gearbox housing bore ID tolerance ± 0.01 mm not specified on drawing." Add a preventive control: "Tolerance call-out verified by design engineer before drawing release."

F-002 · U-002 · AIAG-VDA §2.5.3

Row 14 · RPN

"96"

● **MAJOR**

The RPN recorded in column AP is 96, but $S \times O \times D = 7 \times 4 \times 6 = 168$. An incorrect RPN understates risk and will cause the Action Priority (AP) classification to be wrong, which is an AIAG-VDA §2.5.10 audit finding.

→ Correct the RPN cell to 168. Re-evaluate the AP classification against the §2.5.10 lookup table. With $S=7$, $O=4$, $D=6$ the AP = H (High) — verify recommended actions exist and are assigned.

F-003 · D-001b · AIAG-VDA §1.4.1, §2.4

Row 27 · Failure Cause

"Heat treatment vendor does not meet case depth specification"

● MAJOR

A second supplier-blame cause in the same DFMEA is a systematic pattern. Row 27 references a heat treatment vendor's process, which is outside design control. AIAG-VDA §2.4 requires design causes only.

→ Rewrite as: "Case depth specification not defined on drawing for gear shaft." Assign owner and target date for the drawing revision. If supplier quality is a concern, add a separate incoming inspection control.

F-004 · D-003 · AIAG-VDA §2.5.6

Row 22 · Current Detection Control

"Visual inspection"

■ MINOR

A Detection rating of D=2 assigned to "visual inspection" is inconsistent. AIAG-VDA §2.5.6 detection criteria: D=2 requires near-certain automated detection with quantified measurement. Visual inspection typically supports D=7–9. An underestimated D lowers the AP classification.

→ Either lower the Detection rating to D=7–8 to match "visual inspection" capability, or upgrade the detection control to automated gauging (CMM or coordinate check) that justifies D=2.

F-005 · U-006 · AIAG-VDA §2.3

Row 9 · Failure Effect

"Part fails"

■ MINOR

"Part fails" does not describe the failure effect with enough specificity to assign a Severity score. AIAG-VDA §2.3.2 requires effects to describe the impact on the next-higher-level assembly or the end user. Vague effects lead to inconsistent S scores across the team.

→ Rewrite as: "Loss of bearing retention in gearbox housing under load — vehicle rolls or vibrates; warranty return." Then confirm the S=7 rating against the AIAG-VDA severity table.

F-006 · D-004 · AIAG-VDA §2.5.5

Row 31 · Current Prevention Control

"Engineer review"

■ MINOR

"Engineer review" is an activity, not a design control. AIAG-VDA §2.5.5 prevention controls must reference a specific design parameter or tolerance that prevents the failure cause from occurring. A vague control cannot be verified in audit.

→ Replace with a specific control: "Tolerance stack-up analysis completed per DRB-042 checklist — verified before drawing release."

F-007 · U-003 · AIAG-VDA §2.5.3

Row 18 · Occurrence

"10"

 MINOR

Occurrence rating O=10 indicates a failure cause is expected to occur without control. AIAG-VDA §2.5.3 states that O=10 must only be used when the cause is certain and uncontrolled. Row 18 lists a prevention control, making O=10 inconsistent.

→ Re-evaluate the O rating. If the prevention control is effective, O should be ≤ 6 . If O=10 is correct, mark the listed control as ineffective and add a more robust prevention measure.

F-008 · U-011 · AIAG-VDA §2.6.2

Row 14 · Recommended Action

"Update drawing"

OFI

Recommended action on Row 14 has no assigned owner or target date. AIAG-VDA §2.6.2 requires every recommended action to have a responsible person and a target completion date to maintain accountability.

→ Add: "Owner: [Design Engineer name], Target: [date, e.g. 2026-06-15]" to the Recommended Action cell, or populate the dedicated Action Owner and Target Date columns.

F-009 · U-011 · AIAG-VDA §2.6.2

Row 27 · Recommended Action

"Review with supplier"

OFI

Recommended action on Row 27 also lacks an owner and target date. Two rows without accountability suggests the FMEA template may be missing mandatory fields for action tracking.

→ Assign an owner and target date. Consider adding a template reminder or conditional formatting to flag empty Action Owner / Target Date cells at file save.
