

Failure Code Cheat Sheet

Canonical failure codes for common asset classes. Pick the closest match. Write the code AND a one-line description. This is what turns a "broken bearing" into feedback the cycle can use.

Companion to: *Fix the System*, Chapter 9. **Note:** These codes follow the ISO 14224 taxonomy with practical simplifications. Your plant's CMMS may use different code numbers — map these categories to your local codes in the spreadsheet on the back of this sheet. **Posted where:** taped above every CMMS terminal and on every crew-lead clipboard.

BEARINGS

- **B-101** — Bearing wear (normal end-of-life)
- **B-203** — Bearing wear, radial play exceeded
- **B-205** — Bearing wear, axial play exceeded
- **B-301** — Bearing seizure / failure in service
- **B-401** — Bearing contamination (water, process fluid, foreign particle)
- **B-501** — Bearing lubrication failure (loss of grease/oil, wrong grease, over/under-greasing)
- **B-601** — Bearing misalignment damage (spalling, brinelling)

SEALS

- **S-101** — Seal wear (normal end-of-life)
- **S-105** — Mechanical seal, face-to-face leakage
- **S-107** — Mechanical seal, secondary leakage (O-ring)
- **S-201** — Lip seal, wiper lip damage
- **S-301** — Seal damage from shaft runout / misalignment
- **S-401** — Seal damage from improper installation
- **S-501** — Seal damage from wrong seal selection for service

COUPLINGS / SHAFTS / ALIGNMENT

- **H-042** — Shaft misalignment, parallel offset
- **H-045** — Shaft misalignment, angular
- **H-102** — Coupling wear (elastomer, grid, gear)
- **H-201** — Coupling failure in service (sheared key, broken bolt)
- **H-301** — Shaft surface damage (pitting, scoring)
- **H-401** — Shaft bearing-journal wear
- **H-501** — Shaft dimensional deviation (bent, out of spec)

LUBRICATION

- **L-101** — Oil contamination (water, particulates, wrong viscosity)
- **L-201** — Oil level low
- **L-301** — Grease pump / distributor failure
- **L-401** — Wrong lubricant used
- **L-501** — Lubricant degradation (heat, age, oxidation)

ELECTRICAL

- **E-101** — Motor winding failure (insulation breakdown)
- **E-201** — Motor bearing electrical pitting
- **E-301** — Contactor / relay failure
- **E-401** — VFD fault (over-current, over-voltage, temperature)
- **E-501** — Control wiring fault (loose, broken, shorted)
- **E-601** — Breaker / fuse failure
- **E-701** — Grounding deficiency

INSTRUMENTATION

- **I-101** — Sensor drift out of calibration
- **I-201** — Sensor failure (no signal)
- **I-301** — Transmitter failure
- **I-401** — Sensor contamination / fouling

PROCESS / FLUID

- **P-101** — Process fluid contamination
- **P-201** — Process pressure excursion
- **P-301** — Process temperature excursion
- **P-401** — Flow blockage (filter, strainer, line)

STRUCTURAL / MECHANICAL

- **M-101** — Fastener failure (shear, loosening, thread strip)
- **M-201** — Crack in pressure boundary
- **M-301** — Corrosion (external)
- **M-305** — Corrosion (internal, process-side)
- **M-401** — Erosion / abrasion wear

HUMAN / PROCEDURE

- **U-101** — Operator-induced damage (wrong procedure, over-speed, over-pressure)
 - **U-201** — Maintenance-induced damage (improper reassembly, wrong torque)
 - **U-301** — Missed PM / inspection
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How to use this sheet

1. **Pick the closest code.** If multiple modes are present, list multiple codes. 2. **Always write both the code AND a one-line description.** Just the code number is not enough. Future-you (or a different planner) will need the description. 3. **If no code fits, write "X-999" and describe the mode fully.** Your plant can add new codes from recurring X-999 entries. 4. **Do NOT use "M-999" or "B-999" to mean "I don't know."** If you don't know the failure mode, write that in the notes field. Unknown is information; a wrong code is noise.

Back of sheet — map to your local CMMS codes

Category	Canonical code	Your plant's code	Notes
Bearing wear	B-101		
Bearing seizure	B-301		
Seal leak	S-105		
Shaft misalignment	H-042		
Coupling failure	H-201		
Oil contamination	L-101		
Motor winding	E-101		
Sensor drift	I-101		
Operator-induced	U-101		
... (add as needed)			

From Fix the System by Ivan Getov. Companion to Chapter 9: Close Out and Learn. getov.xyz/toolkit/fix-the-system/ch09/failure-code-cheat-sheet. Free. No email required.