

Honda Pilot Engine Diagnosis Checklist

This document lists the exact questions and tests your mechanic should provide before recommending an engine rebuild. Use this as a guide to avoid unnecessary or inflated repair work.

1. Required Diagnostic Tests

A. Compression Test

- Ask for actual PSI numbers for all cylinders.
- Normal Range: 160–200 psi.
- Cylinders must be within 10% of each other.
- Fail Indicators:
 - * Any cylinder under 120 psi.
 - * Any cylinder more than 15% lower than its neighbors.
 - * Extremely low (0–30 psi) suggests major internal problem.

B. Leak-Down Test (Most Important)

- Determines where air is escaping.
- Pass Range: 0–10%.
- Acceptable: 10–20%.
- Fail Indicators:
 - * 20–30% = noticeable issue.
 - * 30–50% = serious.
 - * Over 50% = major failure.
- Where air escapes and what it means:
 - * Intake manifold → intake valve issue.

- * Tailpipe → exhaust valve issue.
- * Oil filler cap → worn piston rings.
- * Radiator bubbles → head gasket or warped head.

C. Oil Pressure Test

- Pass Values:

- * 15–20 psi at hot idle.
- * 45–60 psi at 3,000 RPM.

- Fail Indicators:

- * Under 10 psi at hot idle.
- * Pressure drops when revving.
- * Erratic pressure readings.

2. Optional but Helpful Tests

A. Borescope Inspection

- Pass Indicators:

- * Smooth cylinder walls.
- * Normal carbon buildup.

- Fail Indicators:

- * Vertical scoring.
- * Damaged valves.
- * Coolant or residue inside cylinder.

B. Oil Examination

- Pass: No metal particles in drained oil.
- Fail:
 - * Silver/chrome flakes → bearing wear.
 - * Copper/bronze → rod bearing damage.

* Milky oil → coolant contamination.

3. Questions To Ask the Mechanic

1. "What diagnostic tests were performed, and may I see the actual readings?"
2. "Can you provide the compression results for all six cylinders?"
3. "Can you provide leak-down percentages for each cylinder?"
4. "What failure did these tests confirm? Valves, rings, gasket, or something else?"
5. "Is the issue limited to a single cylinder or multiple?"
6. "What repairs are possible SHORT of a full rebuild?"
7. "Can I see the used parts after replacement?"
8. "What warranty do you offer on your work?"

4. Red Flags That Indicate You May Be Getting Upsold

- The shop refuses to provide compression or leak-down numbers.
- They recommend a rebuild BEFORE testing.
- They cannot explain precisely what failed.
- They do not offer alternative repairs (e.g., top-end repair, used engine, remanufactured engine).
- No warranty offered on the rebuild.
- They will not let you see removed parts.

5. Summary

A rebuild should never be recommended based solely on a single low-compression reading.

A proper leak-down test, compression numbers, and oil pressure results are mandatory to determine the true issue—many problems are fixable without rebuilding the engine.

Use this document to guide the conversation and ensure you receive honest, thorough,

and professional diagnostic work.