The 1-Page Alignment Map

Find the hidden cause of vibration & short bearing life (>3,000 RPM)

Batnon.com – single-setup machining + in-process probing

> ⚙️ **The problem on high-speed lines (>3,000 RPM):**
> • Bearing life drops 3–5× (3 months → 3–4 weeks)
> • 6–12 stops/shift → $800–$2,000/day lost output
> • **Root cause in >80% of cases:** 0.02–0.05mm misalignment at the **shaft–housing bore interface**.

📍 Three failure zones

Zone	Issue	Consequence
1	Shaft runout >0.02mm	Orbiting, heat, seal wear, noise within weeks
2	Housing bore tilt	Uneven roller loading → skidding → early spalling
3	Bearing seat ovality	Point loading, cage fracture, 3× shorter life

🗺️ Visual reference

Shaft → Bearing inner ring → Bearing outer ring → Housing bore

⚠️ Runout ↗️ Tilt 🟠 Ovality

(Diagram: misalignment at each interface)

🛠️ How we fix it (without redesign):

• Single-setup machining of housing bore + bearing seat
• In-process probing to verify coaxiality **<0.01mm**
• Alignment error reduced by >70% vs conventional methods

📊 Real OEM result – Packaging automation line

Vibration ↓53%
3.2 → 1.5 mm/s

Bearing life ↑4×
4–5 weeks → 20+ weeks

Stops/shift ↓80%
8–10 → 1–2

🔍 **Quick check you can do today (no special tools):**

• Listen for cyclic whine or irregular noise at operating speed
• Check temperature difference between housing vs bearing seat – ΔT >10°C indicates misalignment
• If you have a dial indicator: measure shaft runout at operating temperature – target <0.01mm. If >0.02mm, you're in the high-failure zone.

📌 **Next step**

Click the link in our email to discuss a **free alignment audit** (remote or on-site), or reply with your highest-RPM machine type – we'll send a custom alignment target sheet.
