GELEN

HORIZONTAL SCREEN: BLINDING & PEGGING TROUBLESHOOTING GUIDE

⚠️ Why This Matters

- **Blinding:** Fines packing apertures due to moisture — reduces open area by 30-70%, drastically cutting capacity.
- **Pegging:** Near-size particles wedging in mesh openings — causes permanent blockage until physically removed.
- **Cost:** A blinded screen can lose $5K-15K per hour in production capacity.

🔍 Step 1: Identify the Problem Type

OBSERVATION	PROBLEM TYPE	GO TO
Sticky buildup across mesh surface	Blinding (moisture)	→ Flowchart A
Individual particles wedged in openings	Pegging (near-size)	→ Flowchart B
Material riding over without separating	Poor stratification	→ Flowchart C
Excessive fines in oversize product	Capacity overload	→ Flowchart D

📋 Flowchart A: Blinding (Moisture / Clay)

Is moisture content > 5%?

Check material moisture at feed point with a moisture meter.

↓ YES

Are spray bars installed?

Spray bars should cover full width at 2-4 bar, 45° angle to deck.

↓ YES, but still blinding

Are anti-blinding balls fitted?

Install 25-40mm balls in sub-deck tray beneath primary mesh.

↓ YES, but still blinding

→ **Fix:** Upgrade to polyurethane panels (60% better blinding resistance than wire). If using ETE

series, adjust ellipse angle to 40-45° for aggressive clearing.

📋 Flowchart B: Pegging (Near-Size Material)

Is there a high percentage of near-size particles?	Near-size = particles within ±10% of aperture size. Check PSD analysis.

↓ YES

Is the screen using woven wire mesh?	Woven wire is most susceptible to pegging from cubical particles.

↓ YES

→ **Fix:** Switch to polyurethane panels (continuous flexing prevents lock-in). On ETE series, tighten ellipse angle to 25-30° for precision. Consider increasing aperture size by 5-10% with tighter downstream control.

📋 Flowchart C: Poor Stratification

Is the G-force below 4G?	Measure vibration amplitude at all four corners. Calculate G-force.

↓ YES

Is amplitude symmetric across all corners?	Asymmetry indicates bearing wear, loose bolts, or shaft misalignment.

↓ NO (asymmetric)

→ **Fix:** Check structural fastener torque. Inspect bearings. Re-align shaft per specs. Once symmetric, increase G-force to 4-6G range (verify against bearing specs with GELEN engineering).

📋 Flowchart D: Capacity Overload / Carry-Over

Is bed depth > 3× aperture size?	Measure material depth at the feed end of the deck during operation.

↓ YES

Can feed rate be reduced?	Reduce feed rate or split feed across parallel screens.

↓ NO (cannot reduce)

→ **Fix:** Upgrade to a larger screen model (e.g., ETE 2260 → ETE 2480). Alternatively, add a second deck to pre-scalp oversized material before the main separation.

🔧 Root Cause Analysis Quick Reference

CAUSE	SYMPTOM	FIX	PRIORITY
High moisture / clay	Sticky buildup, blinding	Spray bars + anti-blinding balls + PU panels	FIX #1
Near-size material	Pegging	Adjust ellipse angle + PU panels	FIX #2
Low G-force	Poor stratification	Increase amplitude to 4-6G range	FIX #3
Excessive bed depth	Heavy carry-over	Reduce feed rate or upsize screen	FIX #4
Fine screening (<3mm)	Rapid blinding	Add ultrasonic deck (25-50 kHz)	FIX #5

🛠️ Corrective Actions — Ranked by Effectiveness

Fix #1: Optimize Ellipse Angle (ETE Series Only)

Sticky material → 40-45° | Dry precision → 25-30° | Adjustment time: ~15 min

Highest impact, lowest cost. Always try this first on ETE screens.

Fix #2: Install Anti-Blinding Balls

Requires sub-deck tray. Ball size: 25-40mm. Clears apertures from the bottom up.

Highly effective for clay and damp sand applications.

Fix #3: Upgrade to Polyurethane Panels

60% better blinding resistance than wire. Wear life up to 3× longer.

Continuous flexing action prevents particle lock-in.

Fix #4: Add Ultrasonic Deck (Fine Screening)

Frequency: 25-50 kHz directly into mesh. Best for <3mm apertures.

Specialist solution for fine/precision sieving applications.

Fix #5: Optimize Spray Bar Setup

Pressure: 2-4 bar at 45° to deck. Ensure full-width coverage.

Essential for wet screening. Check nozzles weekly for blockages.

Fix #6: Reduce Bed Depth

Rule: Bed depth ≤ 3× aperture size. Excess depth forces near-size into mesh.

If you can't reduce feed, consider upsizing the screen.

Fix #7: Increase Vibration Intensity

Target: 4-6G range. ⚠️ Do not exceed bearing specifications.

Always verify with GELEN engineering before adjusting.

📝 On-Site Diagnostic Log

DATE	PROBLEM OBSERVED	ROOT CAUSE	ACTION TAKEN	RESULT

📝 Notes

Use this space to record site-specific observations, stock mesh types, spray bar configurations, or ETE ellipse settings for your application.