CNX Vinyl Process Flow: Audio File to Delivered Product (all checks logged to traceability)

1. Audio Intake: files from artist or label

Checks: checksum and format verification; technical QA (levels, side length)

Artist gate: master plan confirmed

2. Vinyl Mastering

Check: mastering engineer QA

Artist gate: approved master

3. Lathe Cutting (lacquer)

Checks: groove inspection microscope; test cut. Marking: dead-wax matrix scribe and angular fiducial (cold mechanical, never laser)

4. Silvering and Electroforming (father, mother, stampers)

Checks: bath chemistry logs; XRF nickel thickness; confocal and profiler metrology (sampled zones); mother listening check (mothers are playable); laser Data Matrix on part backs

5. Stamper Prep (punch, back-finish, coin)

Checks: concentricity and dimensions; visual inspection

PVC compound intake (virgin, 80% of feed)

Material lab gate: CoA, moisture, heat stability, color, density, granulate physicals; release by test pressing

Regrind stream (20% of feed)

Contamination gate (no labels, paper, foreign material)

6. Pressing: semi-auto Newbilt line and automated Pheenix line

Check: per-cycle press telemetry (temperatures, pressures, cycle time, cake weight)

Check: 100% inline optical inspection (non-fill, stitching, warp, concentricity, label)

Artist gate: test pressing approved before production run

Check: sampled automated audio comparison vs master (first-offs, every Nth, stamper age)

7. Finishing: trimming, label, dry oven, shrink wrap

Check: shrink and final visual (sampled)

Labels (printed; print inspection upstream)

Cartons and sleeves from local partners

Incoming carton QC: dimensions, print Delta E, seam strength, inner sleeve scuff check

8. Packaging and Assembly

Checks: assembly verification (runout matrix code vs jacket barcode); inserts per bill of materials; barcode verification on every unit

9. Fulfillment: warehouse, bulk shipment or dropshipping with carrier tracking

Traceability Database: every check, gate, and press cycle logged. Record identity key: stamper + press + cycle + side

Legend

Process stage | Check / QC gate | Artist approval gate | Material input | Traceability log