ATELIER CHEAT SHEET

Paper, ink, scanning

Hahnemühle Nostalgie sketch paper, 190 gsm: “acid free, high longevity”, fine grain for pen work. Faber-Castell Pitt Artist Pen India ink: pigmented, waterproof, permanent, high lightfastness, acid-free, pH neutral; fineliners XS (0.1 mm) to M (0.7 mm).

DRAWING	SCAN MODE	FOR PRINT (AAUP)
pure black lines	Bitmap, 1-bit line art	≥ 1200 ppi; 2400 ppi if the original is under 5 × 7 in
pencil, washes, greys	Grayscale, 8-bit	≥ 300 ppi at final size; 600 ppi if under 5 × 7 in

Line art scanned at 72 ppi stays pixelated – adding resolution later does not fix it. Photoshop: Image > Mode > Bitmap or Grayscale; in Bitmap every pixel is black or white (1 bit).

Pixel or vector

A pixel image has a fixed width and height in pixels; vectors are paths – “sharp printouts and renderings at unlimited resolution” (Inkscape). Lettering and logos that must scale belong in vector.

- **Free – Inkscape:** Path > Trace Bitmap (Shift+Alt+B), Brightness Cutoff for solid black and white, Centerline for editable strokes; then Path > Simplify (Ctrl+L). Not an exact copy.
- **Paid – Illustrator:** Window > Image Trace, preset Black and White, then Expand. Leave slight anti-aliasing on sketches and lettering. Tracing copy no more than 1500 px wide or high – Image Trace warns about file size above that (our suggestion, from AAUP and Adobe).

Halftone: dots, lines, angles

- A press prints ink or none – a halftone turns tones into dots, an optical illusion (Getty). In a dot screen a bigger dot prints darker (RISO).
- **Screen frequency** (lpi): books and magazines 150 lpi – dots blend at about 30 cm; posters need fewer; below 150 lpi the dots usually show – for us, the vintage look (Getty). Also: 20 lpi coarsest RISO IS300 screen · 55 lpi coarse Ives/Levy (Getty) · 85 lpi imagesetter example (Adobe).
- **Angles** for CMYK offset (CLOUDFLOW RIP): C 15°, M 75°, Y 0°, K 45°. **Dot shapes** in Photoshop: round, diamond, ellipse, line, square, cross.
- **Resolution** = 1.5 to 2 × screen frequency: 150 lpi at 2:1 = 300 ppi (Adobe) – as we read it, for a picture the print shop screens. Dots you build yourself are line art: save 1-bit at line-art resolution (our suggestion, from Adobe and AAUP).

TOOL	WHERE · SETTINGS
Photoshop (paid)	Image > Mode > Grayscale, then Bitmap, method Halftone Screen: ppi, frequency, angle (–180° to 180°), shape · Filter > Pixelate > Color Halftone (Elements: radius 4–127 px, channel 1 for greyscale)
GIMP 3.2 (free)	Filters > Distorts > Newsprint: Black on White; Line, Circle, Diamond, PSSquare, Crossing Lines; Period; Angle; oversampling 1 (off) for print
Krita 5.3 (free)	Filters, Artistic > Halftone, mode Intensity; Screentone fill layer: round, ellipse, diamond, square, lpi, rotation

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GIMP period (px) = image ppi ÷ lpi
1200 ppi, 55 lpi ≈ 22 px (our calc.)
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Photocopy look

Analog (our suggestion): print, copy, copy the copy – three or four generations, contrast up; scan the best as 1-bit line art.

1. GIMP 3.2: Filters > Artistic > Photocopy – large Mask radius = thick black borders; Sharpness and Percent black 0.0–1.0, intermediate black usually most natural.
2. Filters > Noise > RGB Noise (Independent RGB off, low Value) or Spread (moves pixels only at the edges).
3. Colors > Threshold – all black or white.
4. Image > Mode > Indexed, “Use black and white (1-bit) palette”, dithering None.

(GIMP and Photoshop order: our suggestion.) Krita 5.3: Random Noise, then Threshold. Photoshop: Filter Gallery, Sketch > Photocopy (foreground/background black and white first – our suggestion), Add Noise (Monochromatic), Threshold adjustment layer – Image > Adjustments > Threshold changes the pixels for good. Print-ready: 1-bit, at least 1200 ppi, TIFF (AAUP).

Linocut: cut safely

- Relief print: you cut away what stays white; the raised parts take the ink (MoMA). Lino has no grain – cut in any direction (Tate).
- Essdee cutters: No 1 narrow V for fine detail, No 2 the most universal, No 5 straight blade (slits in lino). Carve away from your hand, at a shallow angle, without too much force; bench hook and hand guard.
- Lino too hard? Warm it slightly (radiator, hair dryer) – too much heat or cold makes it harder.
- The print shows the design in reverse (Met) – **cut lettering mirrored**.

Ink & printing

Essdee	water-based; clean rollers and trays with warm water and a little washing-up liquid; never white spirit or turpentine on its rubber rollers
Schmincke Aqua Linoprint	gum arabic binder; dries within 15 minutes; smudge-resistant, not waterproof; easy to overprint
Cranfield Caligo Safe Wash	oil-based (linseed oil), washes up with liquid soap, then water – no solvents

Roll the ink out thinly on a glass plate (brayer). Free printing (V&A; on lino: our suggestion): paper on the inked block, thin card on top, rub firmly and evenly – fingertips, newspaper pad, back of a spoon or a clean roller. A press spreads ink more consistently (Met) – not always what a vintage look needs (our view).

Editions & the reduction print

- Edition prints: usually signed, numbered (1/25, 2/25 …), often dated; plus artist’s proofs (AP), printer’s proofs (PP), “bon à tirer”. A trial proof is pulled before the block is finished (Tate).
- **Reduction:** one block for all colours. Picasso with Hidalgo Arnéra, 1962: yellow, red, green, black – after each colour more was cut away; “no room for error” (British Museum).
- Our suggestion: plan colours light to dark · cut what stays paper-white, print colour 1 on all sheets plus spares · cut what stays colour 1, print colour 2 · repeat.
- **Registration** for lino: two card strips as an L on a base board (our suggestion). Cranfield Safe Wash Extender = more transparent ink; tack reducer for textured or dry paper and hand printing.

Risograph

- Stencil duplicator: a master is perforated, wrapped around the ink drum, ink pressed through the holes (RISO). One colour = one drum and one master. Single-colour models: change drum, new master, paper through again; the two-drum MH series prints two colours in one pass.
- Ink = emulsion of oil and water, prints on a very wide range of uncoated papers. 21 standard and 50 custom colours; RISO UK adds fluorescent shades and a metallic gold.
- Overprinted colours mix; order and density change the result (RISO Japan). Ink and stencil position are “not perfect” – every print is unique (RISO Germany).

Riso look on the computer - free

1. GIMP 3.0, RGB image: one layer per ink, greyscale content (black = full ink, white = paper).
2. Foreground = ink, background = white, gradient “FG to BG (RGB)”; Colors → Map → Gradient Map.
3. Layer mode Multiply – overlaps darken like transparent ink.
4. Layer → Transform → Offset (Shift+Ctrl+O), a few pixels, “Fill with background color”.
5. Grain: Filters → Noise → RGB Noise; dots: Filters → Distorts → Newsprint.

(Our suggestion, built from the GIMP manual.) Krita 5.3: Halftone filter, Multiply, Offset Layer, Random Noise with Grayscale. Photoshop: Add Noise, Monochromatic.

Sources: Hahnemühle · Faber-Castell · AAUP · Adobe (Photoshop, Photoshop Elements, Illustrator) · Inkscape · Getty Conservation Institute · CLOUDFLOW RIP manual · RISO (IS300 driver guide, RISO Kagaku, RISO UK, RISO Deutschland) · GIMP 3.0/3.2 Manual · Krita Manual 5.3 · MoMA · Tate · NGA · The Met · V&A · Essdee · Schmincke · Cranfield Colours · British Museum. Details: adubta-music.de/atelier.html