GENERAL

how to draw by scott robertson thomas bertling

Published: September 3, 2026 | Index ID: #-

Introduction

Drawing is more than just a hobby or a skill; it's a language that lets designers, engineers, and artists translate imagination into tangible form. When you want to master the art of drawing, looking at the masters can give you a roadmap to success. Two of the most influential figures in contemporary technical illustration and automotive design are **Scott Robertson** and **Thomas Bertling**. Their books, tutorials, and portfolios have inspired thousands of students worldwide, and their distinct approaches provide a balanced view of both the creative and analytical sides of drawing.

In this article we'll explore how to draw by studying the techniques of Scott Robertson and Thomas Bertling. We'll dissect their signature styles, break down their step by step processes, and give you practical exercises that you can incorporate into your own practice. By the end, you'll have a clear understanding of how to blend perspective, anatomy, and mechanical precision into a single, cohesive workflow.

Who Is Scott Robertson?

Scott Robertson is a Canadian automotive designer, illustrator, and educator who has worked for major car manufacturers such as Audi, Porsche, and Mercedes Benz. He is best known for his bestselling books *Auto Design: A Visual Guide* and *How to Draw: The Complete Guide to Drawing for Artists and Designers*. Robertson's drawing style is characterized by:

- Dynamic perspective – using dramatic angles to convey motion and depth.
- Strong line work – clean, confident strokes that establish form quickly.
- Conceptual clarity – focusing on the essential shape before adding details.
- Integrated rendering – blending shading and texture seamlessly.

His teaching philosophy centers on "drawing from the mind first, then refining with observation." This approach encourages students to develop a strong visual intuition while still grounding their work in realistic proportions and geometry.

Who Is Thomas Bertling?

Thomas Bertling is a German mechanical engineer turned illustrator, best known for his work in industrial design and mechanical illustration. He has contributed to companies like Bosch, Siemens, and BMW, creating detailed technical drawings that bridge the gap between engineering schematics and artistic visualization.

Bertling's style is distinguished by:

- Precision and accuracy – meticulous line work that respects tolerances and mechanical relationships.
- Clear labeling and annotation – using symbols, dimensions, and notes to communicate design intent.
- Layered complexity – building drawings from simple shapes to fully detailed assemblies.
- Integration of CAD and hand drawing – blending digital tools with traditional techniques.

His instructional videos and tutorials emphasize the importance of understanding mechanical principles before attempting to illustrate them. Bertling's methodology is ideal for students who want to produce functional drawings

that can be directly used in manufacturing or engineering documentation.

Key Drawing Principles from Scott Robertson

1. Mastering Perspective

Perspective is the backbone of any realistic drawing. Robertson teaches that a strong perspective frame reduces the need for corrections later. Start with a simple vanishing point grid, then add reference lines to map the object's geometry.

2. The "Shape First" Approach

Before adding detail, outline the main volumes with broad strokes. This helps maintain the overall silhouette and prevents the drawing from becoming cluttered.

3. Line Weight Variation

Use thicker lines for foreground elements and thinner lines for background or less prominent features. This technique creates depth and guides the viewer's eye.

4. Integrated Rendering

Instead of separate shading and texturing stages, blend them during the line drawing process. Robertson often layers light and shadow directly onto the line work.

5. Rapid Sketching and Iteration

Encourage quick sketches to capture movement and form. The more you iterate, the more confident you become with the subject.

Key Drawing Principles from Thomas Bertling

1. Technical Accuracy

Every line, angle, and dimension in Bertling's drawings serves a purpose. He uses strict measurements and reference data to ensure that each component fits within the overall assembly.

2. Structured Layering

Begin with a base layer of simple shapes, then progressively add details, textures, and annotations. This hierarchy keeps the drawing organized.

3. Use of CAD for Reference

Bertling often imports CAD files or screenshots into his sketching software to maintain accurate geometry. This hybrid approach allows for both flexibility and precision.

4. Annotations and Symbols

Clear labeling of parts, dimensions, and materials is essential for functional drawings. Bertling incorporates standardized symbols to convey information efficiently.

5. Consistent Line Quality

He maintains a consistent line weight throughout the drawing, except when indicating depth or emphasis. This uniformity supports readability and professionalism.

Step by Step Guide: Drawing a Concept Car with Scott Robertson

1. Choose a Concept

Select a vehicle type (e.g., sports car, SUV, concept car). Gather reference images and mood boards.

- Draw a horizon line and locate the vanishing point(s). Use a 2 point or 3 point perspective depending on the angle.
- Sketch the basic framework of the car's silhouette using simple geometric shapes.
- Block out the main volumes: chassis, hood, roof, rear, wheels. Keep lines bold and confident.
- Adjust proportions to match the desired aesthetic.
- Introduce windows, doors, and trim lines. Keep them simplified until the main shape is solid.
- Use reference photos to capture correct angles and spacing.
- Apply line weight variation: thicker lines for the front and foreground, thinner for background.
- Clean up any overlapping or unnecessary lines.
- Identify light source and cast shadows accordingly.
- Blend shading directly into the line work using hatching or cross hatching.
- Add subtle textures: chrome, matte paint, or carbon fiber patterns.
- Keep details minimal at this stage; focus on overall mood.
- Review the drawing for balance and composition.
- Make final adjustments to line strength and shading.
- Sign and date your work.

Step by Step Guide: Drawing a Mechanical Design with Thomas Bertling

1. Define the Component

Select a mechanical part (e.g., gearbox, piston, bracket). Gather technical drawings or CAD files.

- Start with a 2 D orthographic view (front, top, side). Use a ruler or digital grid to keep proportions accurate.
- Sketch the main shape, focusing on key dimensions.
- Introduce secondary features such as mounting holes, fillets, and chamfers.
- Maintain a consistent line weight throughout.
- Label dimensions with standard notation (e.g., Ø for diameter, H for height).
- Add material specifications and tolerances where necessary.
- Cross check dimensions against the CAD model or engineering specs.
- Make corrections to ensure functional accuracy.
- Use shading to indicate depth and material differences.
- Apply textures (e.g., riveted steel, machined surface) to enhance realism.
- Create exploded views, sectional cuts, or isometric drawings if required.
- Ensure that all views are aligned and consistent.
- Check for missing annotations or inconsistencies.
- Verify that the drawing meets industry standards (ISO, ANSI).
- Export the final file in the required format (PDF, DWG, etc.).

Comparing Techniques: Artistic vs. Technical Drawing

While both Robertson and Bertling share a commitment to accuracy, their end goals differ:

- Scott Robertson focuses on visual storytelling—creating images that evoke emotion, speed, and design intent.
- Thomas Bertling prioritizes functionality—producing drawings that can be used in manufacturing and engineering.

By studying both approaches, you can develop a versatile skill set that balances creativity with precision. For example, you might use Robertson's perspective techniques to sketch a concept vehicle, then apply Bertling's annotation methods to produce a technical specification sheet.

Tools & Materials for Both Styles

- Paper – Bristol smooth paper (200 /gsm) for line work; heavier weight for sketching.
- Drawing Instruments – Mechanical pencils (HB, 2B), fine liners (0.1 /mm to 0.5 /mm), technical pens (Tombow Mono, Staedtler Mars).
- Digital Tools – Adobe Illustrator or CorelDRAW for vector work; Procreate or Clip Studio Paint for hand drawn digital rendering; CAD software (SolidWorks, Fusion 360) for reference.
- Rulers & Templates – Precision rulers, set squares, compasses.
- Reference Materials – Technical manuals, product brochures, 3 D models, high resolution photographs.

Practice Tips for Mastery

- Daily Sketches – Commit to 15 minute quick studies focusing on different aspects (e.g., wheels, headlights, gears).
- Reverse Engineering – Take a finished product and redraw it from scratch, noting proportions and lines.
- Peer Review – Share your work with a community or mentor for constructive feedback.
- Cross Discipline Projects – Combine a concept car sketch with a mechanical drawing of its drivetrain to practice blending styles.
- Keep a Sketchbook – Organize pages by theme (perspective, shading, annotation) for easy reference.

Conclusion

Drawing by Scott Robertson and Thomas Bertling offers a comprehensive roadmap for anyone looking to elevate their illustration skills. Robertson's dynamic, perspective driven approach teaches you how to capture movement and emotion, while Bertling's rigorous, annotation heavy methodology ensures that your drawings can stand up to engineering scrutiny.

By integrating these

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