How to Practice Drawing Machinery: Gears and Housings Form Study

Ordinary topic reference / separately checked pixels



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Original worked example / unchanged complete key

Prompt: On a practice plate, draw one gear with 8 teeth and a housing outline around it. Use a hypothetical outer radius of 20 mm and a root radius of 16 mm. Place the gear center at a grid intersection, draw a vertical shaft axis, and shade the housing with a light direction from the upper left. Label the tooth count and radii as hypothetical examples.

Answer: The plate shows a gear center on a grid intersection with outer circle radius 20 mm and root circle radius 16 mm. Eight teeth are spaced by 360 divided by 8, which equals 45 degrees per tooth. Each tooth centerline passes through the center. A vertical shaft axis extends to the housing edge. The housing outline leaves at least one grid square of clearance around the outer circle. Shading uses light tone on the upper-left curve, mid tone on the front, and dark tone on the lower-right edge. Labels state 8 teeth, 20 mm outer radius, and 16 mm root radius as hypothetical examples.