

Mass production relies on economical manufacturing methods, often involving complete part replacement (e.g., in aerospace). Dimensional limits, based on allowances and tolerances, ensure parts assemble easily. A basic size has plus/minus tolerances. Allowances create specific fits; for example, in a shaft-hole system, one part (shaft or hole) is made precisely to the nominal size, while the other incorporates the allowance for easier manufacturing. This can be 'shaft-based' or 'hole-based,' with hole-based being more common. The allowance is the difference between the shaft's high limit and the hole's low limit; both have high/low limits and tolerances.