

Geometric Dimensioning & Tolerancing (GD&T) Training | eLearning Course

Geometric Dimensioning and Tolerancing - WXBP204-XX01XEN-E2

Objective 5: Define Two Types of Fits

Online Practice: Determine the Fit of a Mating Parts Sample

Part A: Shaft
 $\varnothing 7.53^{+0.15}_{-0.00}$

Part B: Flange
 $\varnothing 7.75 \pm 0.05$
 $\varnothing 10.0 \pm 0.05$

Select the correct type of fit for the two parts shown.

Forced Fit
 Sliding Fit

Choose the best answer for the question.

This page is interactive. Click anywhere to hide the instructions.

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eLearning Course: MXBP204

Amatrol's Geometric Dimensioning and Tolerancing (GD&T) eLearning course (MXBP204) introduces learners to the underlying concepts and practices of GD&T. The course focuses on understanding dimensions and tolerances on engineering drawings per the [ASME Y14.5M-1994 standard](#). Learners study datums, geometric rules and types, GD&T characteristics, tolerance types, and tolerance zones.

Teach GD&T Skills

What is Conventional Tolerancing? How are They Specified on a Drawing?

A tolerance is the total amount by which a specified dimension is allowed to vary. One way to specify a tolerance is to show the plus and minus tolerance value next to the nominal dimension. This is called **conventional tolerancing**.

There are two ways conventional tolerances are specific on a drawing:

- **Bilateral Tolerance:** A bilateral tolerance means that the actual dimension can be either larger or smaller than the dimension shown on the drawing. If the amount of variation in either direction is the same, the bilateral tolerance is indicated. In some cases, the tolerance of a dimension must be made smaller in one direction than another because of the design needs of the part, or the assembly into which the part is being assembled.
- **Unilateral Tolerance:** In certain cases, the dimension of the part can only be allowed to vary in one direction. The amount that the dimension can vary in this one direction is called a unilateral tolerance.

Interactive eLearning

In-Depth eLearning Curriculum Connected to Real-World Skills

Amatrol's eLearning curriculum is unique in that it thoughtfully combines in-depth theoretical knowledge with practical, hands-on skills. This powerful combination of knowledge and skills solidifies understanding and creates a strong foundation for pursuing more advanced skills. Amatrol's eLearning integrates various types of learning methods to create an engaging, effective learning experience. Amatrol's multimedia [eLearning](#) curriculum includes text with voiceovers, videos, 3D animations, pictures, and interactive activities, quizzes, and self-reviews.

Free Learning Management System (LMS)

Amatrol eLearning is easy-to-use for both students and instructors. Its web-based interface is simple to navigate and available on any WebGL-compatible Internet browser. Instructors love Amatrol eLearning for its simple, yet sophisticated Learning Management System (LMS). The LMS allows instructors to create custom courses, monitor student participation, track course progress, assess knowledge levels prior to a course, and test knowledge levels after completion. Learners appreciate the fact that they can start and stop as needed, moving through each Amatrol course at their own pace. If a self-review reveals that they didn't understand a particular topic as well as they thought they did, they can revisit it before moving on.

Additional Info

Requires:

- Computer (see [Computer Requirements](#))

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