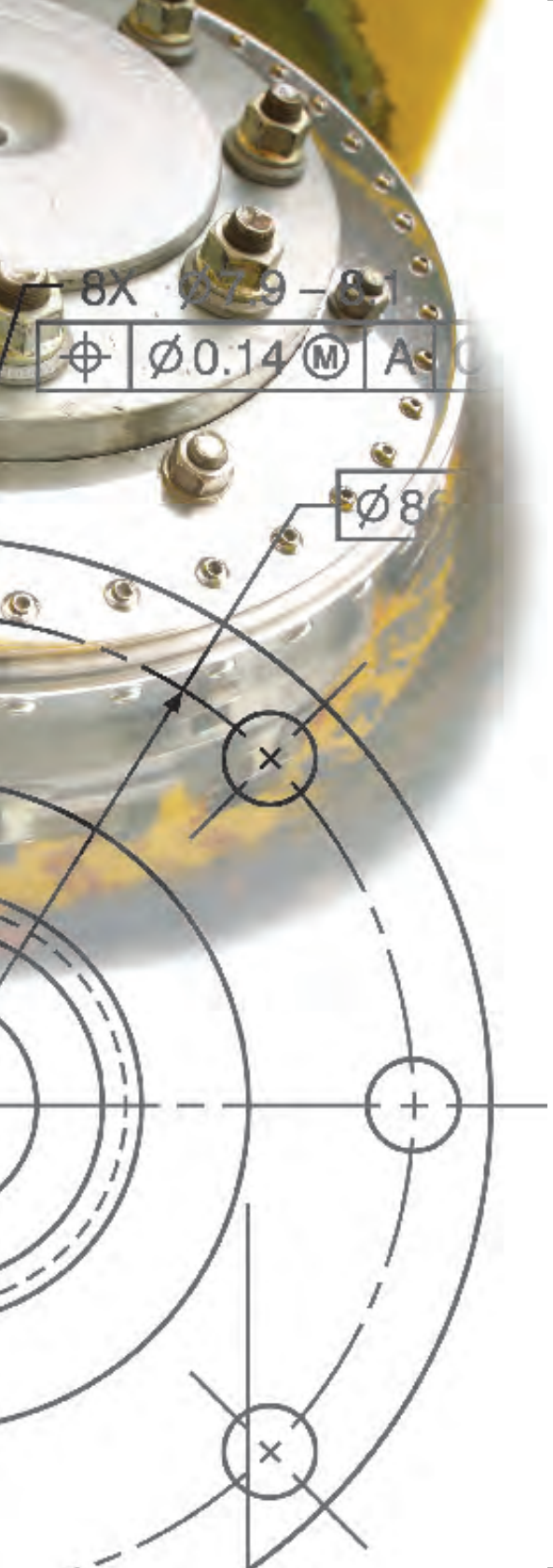

The New Y14.5

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About GD&T and Y14.5

The Y14.5 standard is considered the authoritative guideline for the design language of geometric dimensioning and tolerancing (GD&T). It establishes uniform practices for stating and interpreting GD&T and related requirements for use on engineering drawings and in related documents.

GD&T is an essential tool for communicating design intent – that parts from technical drawings have the desired form, fit, function and interchangeability. By providing uniformity in drawing specifications and interpretation, GD&T reduces guesswork throughout the manufacturing process – thus helping to improve quality, reduce costs, and shorten delivery times.

Now, a consensus panel of industry experts has revised Y14.5 for 21st-century applications!

In today's economy, your company cannot afford mistakes in interpreting engineering designs throughout the manufacturing process. That's why your purchase of the new Y14.5 is the best investment you can make today – for your company and your career!

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ASME Y14.5 – 2009, Dimensioning and Tolerancing

Revised and improved ! … establishes uniform practices for stating and interpreting dimensioning, tolerancing, and related requirements for use on engineering drawings and in related documents.

ASME Order No.: N00509 (Book); N0050Q (Single-User PDF)
ISBN: 978-0-7918-3192-2
Pages: 224

About this Revision: The Next Generation

Y14.5 was revised by a consensus panel of industry experts. Here is what one panel member, a Technical Fellow at a leading aerospace manufacturer, has to say about this "next generation":

" The 2009 standard advances the state of the art without reversing past practices. Adopting the new standard enables clarity of requirements in complex applications that previously required notations. Adopting the 2009 standard also makes it possible to gain new capabilities without giving up anything of the past. Failure to adopt the 2009 standard would mean continuing to work with limitations that could be removed.

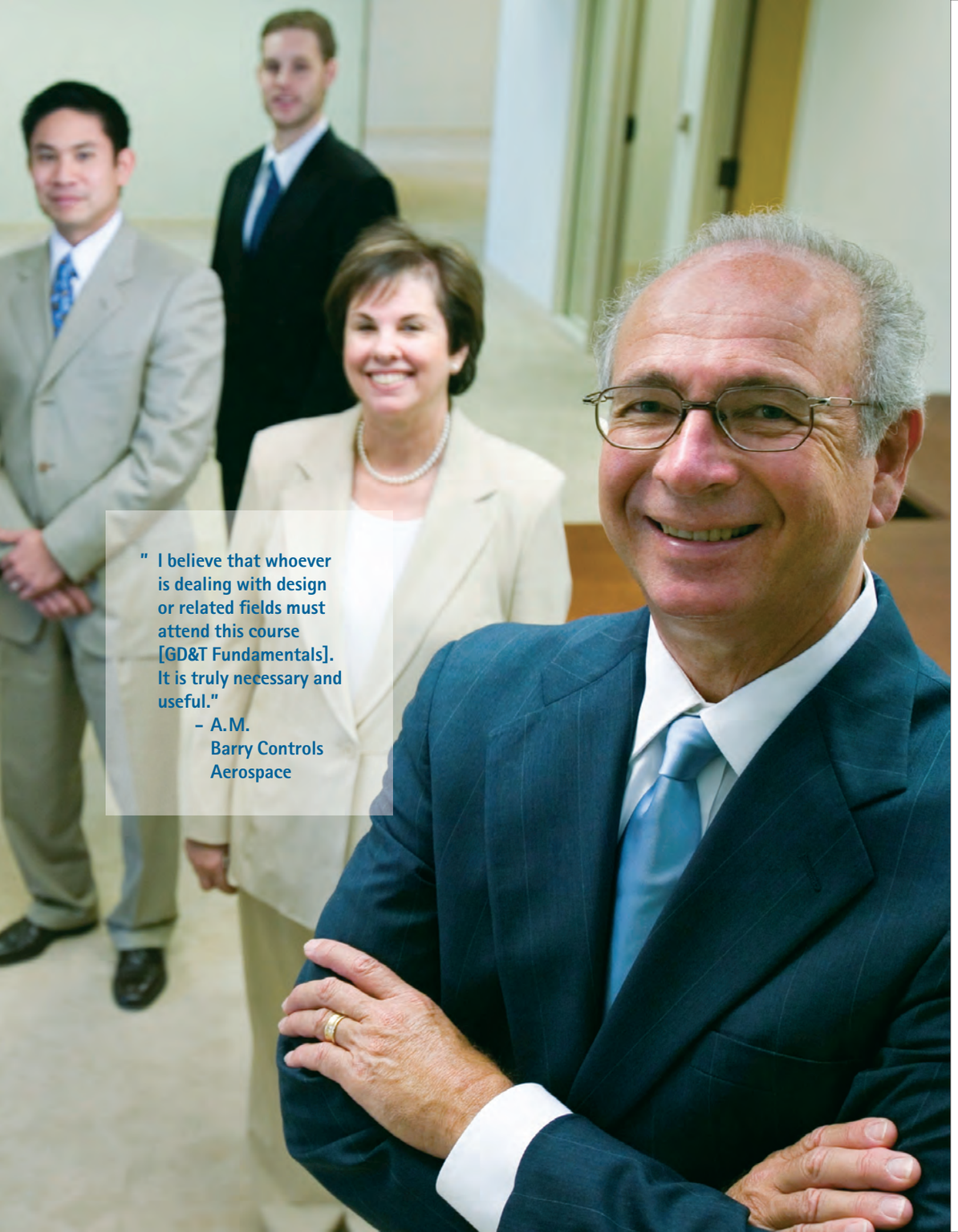
The six most important changes the committee made in this revision are:

- *Explanation of datum references in terms of degrees of freedom*
- *Allowing for customization of the degrees of freedom constrained by datum feature references*
- *Expanding composite position tolerance explanations to include three segments*
- *Simplification of the explanation of composite tolerances*
- *Clarification of surface boundaries taking precedence over axis methods of interpretation*
- *Expansion of the explanation of profile tolerances*

Previously, there were occasional disagreements regarding interpretation of tertiary datum feature references. The 2009 standard clarifies the default meaning and allows for other desired effects to be achieved through new methods.

The 2009 standard helps industry save money by making it possible to more clearly define some requirements. That potentially will reduce the risk of confusion, errors in interpretation, and in some cases should minimize the risk of litigation.

Finally, the material is now organized more logically with profile, orientation, and form in separate sections. The material within sections also was reorganized to flow more logically."



" I believe that whoever is dealing with design or related fields must attend this course [GD&T Fundamentals]. It is truly necessary and useful."

– A.M.
Barry Controls Aerospace

ASME's Related GD&T Offerings: An Elite Company

Y14.5 has been rigorously studied and employed by a majority of North America's leading manufacturers and their suppliers, and by thousands of other leading manufacturers throughout the world. GD&T practitioners range broadly across industries and engineering disciplines.

More than 100,000 copies of Y14.5 have been purchased since 1994. Buy your copy of the new Y14.5 now. Then progress to ASME's related offerings – Standards, Training Courses, and Handbooks and – to help assure you don't get left behind!

Purchasers of ASME's related GD&T offerings include such manufacturers as:

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- General Dynamics
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- Eastman Kodak
- Harley-Davidson
- Loral Space Systems
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Job titles include, but are not limited to:

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- Drafter, Production or Manufacturing Engineer
- Process Engineer
- Quality Engineer
- Tool or Gage Engineer
- Engineering Manager
- Checker
- Engineering Consultant
- Educator
- Inspector
- Contract Engineer
- Project Engineer
- Technical Specialist

ASME's Related GD&T Offerings

Standards

With the related GD&T Standards that follow, ASME provides you with comprehensive criteria for implementing GD&T effectively across your manufacturing supply chain.

ASME Y14.41 – 2012, Digital Product Definition Data Practices

… applicable to the preparation and revision of digital product definition data (data sets).

ASME Order No.: N17112 (Book), N1711Q (Single-User PDF); ISBN: 9780791834077; Pages: 102

ASME Y14.5.1M – 1994, Mathematical Definition of Dimensioning and Tolerancing Principles

… consistent with the principles and practices of ASME Y14.5M-1994.

ASME Order No.: N13294 (Book), N1329P (Single-User PDF); ISBN: 0791822524; Pages: 82

ASME Y14.2 – 2008, Line Conventions and Lettering

…for use in the preparation of engineering drawings, including requirements for CAD (Computer Aided Design) and reduction and reproduction.

ASME Order No.: N00208 (Book), N0020Q (Single-User PDF); ISBN: 9780791831687; Pages: 20

ASME Y14.24 – 1999, Types and Applications of Engineering Drawings

… used to establish engineering requirements. It describes typical applications and minimum content requirements.

ASME Order No.: N12299 (Book), N1229P (Single-User PDF); ISBN: 0791825981; Pages: 86

ASME Y14.31 – 2008, Undimensioned Drawings

… graphically define items with true geometry view(s), predominantly without the use of dimensions.

ASME Order No.: N18908 (Book), N1890Q (Single-User PDF); ISBN: 9780791831700; Pages: 40

ASME Y14.34 – 2008, Associated Lists

… for the preparation and revision of parts lists, data lists, and index lists.

ASME Order No.: N10208 (Book), N1020Q (Single-User PDF); ISBN: 9780791831632; Pages: 32

ASME Y14.35M – 1997, Revision of Engineering Drawings and Associated Documents

… for revising drawings and documentation; establishes methods for recording revisions.

ASME Order No.: N13097 (Book), N1309P (Single-User PDF); ISBN: 0791824403; Pages: 24

ASME Y14.36M – 1996, Surface Texture Symbols

… for surface texture of solid materials (e.g. roughness, waviness, and lay) by providing a set of symbols for use on drawings, specifications, or other documents.

ASME Order No.: N08096 (Book), N0809P (Single-User PDF); ISBN: 0791823199; Pages: 20

ASME Y14.38 – 2007, Abbreviations and Acronyms for Use on Drawings and Related Documents

… used on engineering drawings and related documentation.

ASME Order No.: J00307 (Book), J0030Q (Single-User PDF); ISBN: 0791831221; Pages: 136

ASME Y14.100 – 2004, Engineering Drawing Practices

… applicable to the preparation and revision of engineering drawings and associated lists.

ASME Order No.: N13804 (Book), N1380T (Single-User PDF); ISBN: 0791829502; Pages: 44

ASME Y14.43 – 2011, Dimensioning and Tolerancing Principles for Gages and Fixtures

… used for the verification of maximum material condition (MMC) size envelopes.

ASME Order No.: N17011 (Book), N1701Q (Single-User PDF); ISBN: 9780791833483; Pages: 108

ASME Y14.44 – 2008, Reference Designations for Electrical and Electronic Parts and Equipment

… for electrical and electronics parts and equipment.

ASME Order No.: N18808 (Book), N1880Q (Single-User PDF); ISBN: 9780791831533; Pages: 28

ASME B46.1– 2009, Surface Texture (Surface Roughness, Waviness and Lay)

… covers surface finish, roughness, texture, microfinish, nanotechnology, bearing area, calibration, certification, fractals, filters, step heights and instrumentation.

ASME Order No.: M01909 (Book); ISBN: 9780791832622; Pages: 120

ASME B89.4.10360.2 – 2008, Acceptance Test and Reverification Test for Coordinate Measuring Machines (CMMs) Part 2: CMMs Used for Measuring Linear Dimensions (Technical Report)

… describes methods to specify and test the measurement performance of Coordinate Measuring Machines (CMMs).

ASME Order No.: L08608 (Book), L0860Q (Single-User PDF); ISBN: 9780791831540; Pages: 78

" The course was even better than I was expecting. The GD&T methods pointed out many useful techniques. It was great to see GD&T applied to real-world problems."
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Water Corp.

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For onsite training and customized courses, contact Paul Francis, ASME Manager of Corporate Development, 973-244-2304, francisp@asme.org.

For specific course offerings and dates, contact ASME.

Geometric Dimensioning & Tolerancing Fundamentals 1

(Short Course) … an in-depth study designed to develop a basic working knowledge in GD&T.

ASME Course No.: PD570; CEU's: 1.50; PDH's: 15.00; No. Days: 2

Basic Geometric Dimensioning & Tolerancing (GD&T) Y14.5M

(Online Instructor-led Course) … covers most of the geometric dimensioning controls used on mechanical engineering drawings. Also covers areas of design, tooling, production, and inspection.

ASME Course No.: ZI010; CEU's: 2.30; No. Days: 43

Advanced Geometric Dimensioning & Tolerancing (GD&T) Y14.5M

(Online Instructor-led Course)… develop Advanced GD&T competencies.

ASME Course No.: ZI100; CEU's: 2.30; No. Days: 43

Drawing Interpretation Online Course

(Online Instructor-led Course)… understand basic mechanical two-dimensional engineering drawings.

ASME Course No.: ZI208; CEU's: 2.30; No. Days: 43

Dimensioning and Tolerancing Principles for Gages and Fixtures (GD&T) Y14.43

(Short Course) … Participants of this course will study and apply techniques on the proper design, dimensioning and tolerancing of GO gages, NOGO gages, Functional Gages and Fixtures per the newly issued ASME Y14.43-2003 standard.

ASME Course No.: PD515; CEU's: 2.30; No. Days 3.

Geometric Tolerancing Advanced Applications with Stacks and Analysis (GD&T)

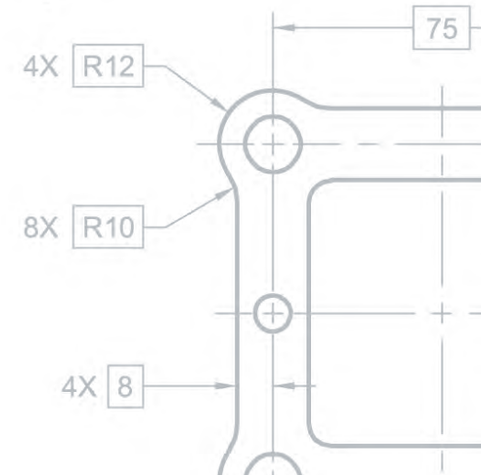
(Short Course) … Using computer animated color graphics and demonstrations with wood and plastic models, participant teams will learn to apply and verify geometric tolerancing. The participants will apply geometric tolerancing to a series of case study problems to meet functional requirements.

ASME Course No.: PD561; CEU's: 1.50; No. Days: 2

Mechanical Tolerancing for Six Sigma

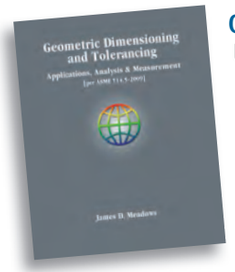
(Short Course) … The course teaches participants how to solve assembly stacks using both traditional and Six Sigma methods. We highlight the design risks that are associated with the classical methods of tolerance analysis, and introduce Six Sigma methods that will eliminate these risks.

ASME Course No.: PD449; CEU's: 1.50; No. Days: 2



Handbooks

ASME conducts one of the largest technical-publishing operations in the world. Its ASME Press publishes high-quality professional and reference books, handbooks, non-ASME conference proceedings, as well as advanced monographs in selected subject areas of interest to mechanical engineers and allied disciplines. This handbook – available as a Print-Book or Digital Download (PDF) – is an example of the high quality and real-world practicality that characterize our offerings.



Geometric Dimensioning and Tolerancing
by James D. Meadows

*… the most comprehensive GD&T volume ever written by a single author. **Geometric Dimensioning and Tolerancing Handbook** has the unprecedented ability to cover almost every facet of tolerancing. Time can be a limiting factor in topics to be covered in a workshop or course. . . but this book has it all!*

Although based on the rules found in the ASME Y14.5-2009 standard, it also covers topics from other recently published standards by ASME not found in older texts. It includes step-by-step procedures for dimensioning and tolerancing parts and assemblies. It shows how to analyze the tolerances applied using both worst case and statistical analysis.

This book demonstrates the connection between the application of functional geometric tolerances and its effect on manufacturability and inspection, stressing optimal ways to achieve a high-quality product at the lowest possible cost to the customer.

ASME Order No.: 802166 (Book), 80216Q (Single-User PDF); ISBN: 9780971440166; Pages: 560

About the Author

James D. Meadows, ASME Certified Sr. Level Geometric Dimensioning and Tolerancing Professional, has been a full-time GD&T trainer/consultant since 1982. He has written nine other best-selling GD&T books and is a member of 10 ASME/ANSI/ISO standards committees that relate to dimensioning and tolerancing practices.

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