ASME Y14.3-2012
[Revision of ASME Y14.3-2003 (R2008)
and Consolidation of ASME Y14.4M-1989 (R2009)]
REAFFIRMED 2024

# Orthographic and Pictorial Views

## Engineering Drawing and Related Documentation Practices

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

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The American Society of Mechanical Engineers

Two Park Avenue • New York, NY • 10016 USA

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# CONTENTS


Foreword ..... vi
Committee Roster ..... vii
Correspondence With the Y14 Committee ..... viii

**1 General** ..... 1
**2 References** ..... 2
**3 Terms and Definitions** ..... 3
**4 Pictorial View Creation** ..... 3
**5 Orthographic View Creation** ..... 13
**6 Principal Orthographic Views** ..... 20
**7 Drawings With Orthographic Views** ..... 24
**8 Section Views in Orthographic Projection** ..... 30
**9 Saved Views** ..... 41
**10 Conventional Representation** ..... 51
**11 Exploded Pictorial Assembly Views** ..... 65
**12 Pictorial Views as Illustrations** ..... 66

**Figures**
4-1 Kinds of Projection ..... 6
4-2 Isometric Projection ..... 7
4-3 Dimetric Projection ..... 7
4-4 Trimetric Projection ..... 8
4-5 Choice of Axonometric View ..... 8
4-6 Oblique Projection ..... 9
4-7 Oblique Projections and Effect of Foreshortening ..... 10
4-8 One-Point Perspective ..... 10
4-9 Two-Point Perspective ..... 11
4-10 Three-Point Perspective ..... 11
4-11 Location of Point of Sight in Perspective ..... 12
4-12 Pictorial View Coordinate System ..... 12
5-1 Orthographic Projections to Form Orthographic Views ..... 14
5-2 Space and Orthographic Arrangement of Views (Third-Angle Projection) ..... 15
5-3 Space and Orthographic Arrangement of Views (First-Angle Projection) ..... 16
5-4 Third-Angle Projection Standard Arrangement of the Six Principal Orthographic Views ..... 17
5-5 First-Angle Projection Standard Arrangement of the Six Principal Orthographic Views ..... 17
5-6 Arrow Method — Principal Views ..... 18
5-7 Arrow Proportions ..... 18
5-8 Projection Symbol ..... 19
6-1 Removed View ..... 21
6-2 Arrow Method — Removed View ..... 21
6-3 Rotated View ..... 22
6-4 Arrow Method — Rotated View ..... 22
6-5 Rotation Arrow ..... 22
6-6 Removed View When Multiple Drawing Graphic Sheets Are Used ..... 23

| | | |
|---|---|---|
| 7-1 | Drawings With One View | 25 |
| 7-2 | Drawings With Two Views | 25 |
| 7-3 | Drawing With Three Orthographic Views | 26 |
| 7-4 | Drawing With Three Orthographic Views of a Stamping | 26 |
| 7-5 | Front View and Partial Auxiliary Views | 27 |
| 7-6 | Partial Auxiliary View | 27 |
| 7-7 | Partial Auxiliary, Partial Front, and Right-Side Views | 28 |
| 7-8 | Partial Primary and Secondary Auxiliary Views | 28 |
| 7-9 | Detail | 29 |
| 7-10 | Phantom Lines for Related Parts | 29 |
| 8-1 | Section Lining | 32 |
| 8-2 | Zone Referencing for Removed Sections | 32 |
| 8-3 | Full Section, Cutting Plane Omitted | 33 |
| 8-4 | Half Section, Cutting Plane Omitted | 33 |
| 8-5 | Identifying Sections | 34 |
| 8-6 | Arrow Method — Identifying Sections | 35 |
| 8-7 | Bent and Offset Cutting Planes | 35 |
| 8-8 | Full Section | 36 |
| 8-9 | Half Section, Assembly | 36 |
| 8-10 | Omission of Visible Lines | 37 |
| 8-11 | Omission of Hidden Lines | 37 |
| 8-12 | Constructed Offset Section View | 38 |
| 8-13 | Aligned Section | 38 |
| 8-14 | Removed Section | 39 |
| 8-15 | Removed Sections on Center Lines | 39 |
| 8-16 | Revolved Sections | 40 |
| 8-17 | Broken-Out Sections | 40 |
| 8-18 | Auxiliary Sections | 40 |
| 9-1 | Model | 43 |
| 9-2 | Model and Drawing Graphic Sheet | 44 |
| 9-3 | Design Model With Offset Section | 45 |
| 9-4 | Design Model Cutting Plane | 46 |
| 9-5 | Design Model With Cutting-Plane Intersection Lines Shown | 47 |
| 9-6 | Axonometric Views, Coordinate System Shown, Section View Rotated | 48 |
| 9-7 | Drawing Graphic Sheet, Cutting-Plane Intersection Lines Shown | 49 |
| 9-8 | Section View in the Same Orientation as the View Containing the Cutting Plane | 50 |
| 10-1 | Line Precedence | 52 |
| 10-2 | Use of Hidden Lines in Pictorial | 53 |
| 10-3 | Rotated Features to Show True Shape | 53 |
| 10-4 | Small Intersections | 54 |
| 10-5 | Large Intersections | 54 |
| 10-6 | Conventional Representation, Filleted and Rounded Corners | 55 |
| 10-7 | Conventional Representations, Fillets, Rounds, and Runouts | 55 |
| 10-8 | Fillets and Rounds | 56 |
| 10-9 | Conventional Representation, Breaks in Elongated Features | 57 |
| 10-10 | Break Lines | 58 |
| 10-11 | Section Through Ribs | 58 |
| 10-12 | Conventional Representation of Ribs | 59 |
| 10-13 | True Geometry Through Ribs | 59 |
| 10-14 | Section Across Ribs | 60 |
| 10-15 | Section Views and Section Lining | 60 |
| 10-16 | Section Through Assembly | 61 |
| 10-17 | Section Through Shafts, Keys, Bolts, Nuts, and Like Items | 61 |
| 10-18 | Spokes in Section | 62 |
| 10-19 | Rotated Features | 62 |

10-20 Conventional Representation of Rotated Features ..... 63
10-21 Intersections in Section ..... 63
10-22 Intersections ..... 64
11-1 Comparison of Standard Section With Exploded Assembly ..... 65

**Nonmandatory Appendices**

A Space Geometry ..... 67
B Space Analysis and Applications ..... 72
C Illustrations ..... 78

**Index** ..... 83

# FOREWORD

This issue is a revision of ASME Y14.3-2003, formerly titled "Multiview and Sectional View Drawings." This revision of ASME Y14.3 was initiated in response to industry and DoD requests that international practices and computer aided design (CAD) capabilities be accommodated. The work on this revision of the standard began in April 2009 in a virtual meeting of the ASME Y14 Subcommittee 3 (SC3). Work moved forward with a focus on adding practices relevant to CAD utilization.

Following the April 2009 meeting, the chairman of SC3, B. A. Wilson, and the chairman of SC4, J. D. Keith, began discussions regarding the possible merge of content from ASME Y14.3 and Y14.4 to locate orthographic and pictorial view requirements in one standard. A new scope and charter of SC3 was drafted to cover the combined content, and it was submitted to the ASME Y14 committee for approval. Approval was given and members of SC4 were combined with SC3. ASME Y14.3 was given a new title of "Orthographic and Pictorial Views."

The first meeting of the combined subcommittees was held in April, 2010. During 2010, the chairman of SC3 began working with N. H. Smith, chairman of SC41, to determine if view-specific content in ASME Y14.41 should be moved into ASME Y14.3. The cooperative efforts between SC3 and SC41 resulted in movement of view-specific content from ASME Y14.41 into ASME Y14.3.

ASME Y14.3 now includes requirements for orthographic and pictorial views, whether product definition is accomplished by 2D drawing only, model only, or both. Generally, view requirements are applicable regardless of means of creation, but there are some specific requirements limited in applicability based on view creation method.

This revision of ASME Y14.3 continues a transition to standardize view requirements that are compatible with CAD capabilities and common industry practices. The inclusion of CAD specific requirements was initiated in the development of ASME Y14.3-2003 as well as in the development of ASME Y14.41-2003. It is expected that in the future, the requirements in ASME Y14.3 will continue to move towards one set of requirements that are consistent regardless of view creation method. At this time, there are practices that are limited to constructed views or to model-based views. It is anticipated that future revisions of this Standard will continue to expand coverage of view requirements for CAD-created views with the constructed view conventions potentially being removed when there is no longer a need for them.

Significant revisions include the following:

*(a)* reorganizing to include and advance the content of ASME Y14.3-2003, ASME Y14.4-1989(R2004), and applicable paragraphs and figures from ASME Y14.41-2012

*(b)* making view requirements based on CAD practices and capabilities more prevalent throughout the standard

*(c)* noting as such, requirements applicable to only constructed views , and excluding from constructed view practices, the newer practices when applicable only to CAD-created views

In this Standard, anything identified as a requirement is mandatory. Compliance with requirements is not optional except where more than one method is provided in which case one of the options shall be used. Actions, drawing elements, or other items identified as practices are typical but are not required, except where those practices are expressed as requirements or specified as practices to be used.

The successful revision of this Standard is attributed to the commitment of the committee members and the support of their sponsoring companies. The commitment of their time and contributed expertise are gratefully acknowledged. J.D. Keith, former chairman of ASME Y14 SC4, worked alongside with the SC3 chairman to keep the work on schedule and ensure that it was technically correct. N.H. Smith, chairman of ASME Y14 SC41, worked closely with the SC3 chairman to transition technical content from ASME Y14.41 to ASME Y14.3. L.F. Irwin served as a technical liaison between SC3 and SC41 to ensure the technical intent of the Y14.41 material was correctly merged into Y14.3. R.H. Settle created the figures for this and the previous edition of ASME Y14.3. J.B. Burleigh, R.G. Campbell, R.R. Cruz, J.I. Miles, and A. Watts served as section leaders, each of whom worked to develop the first draft of one or more of the Sections.

It is our intention for future revisions of this Standard to continue moving us forward towards defining common practices that are applicable regardless of view creation methods. Interested parties are invited to contact ASME for involvement in future development efforts.

Suggestions for improvement of this Standard are welcome. They should be addressed to The American Society of Mechanical Engineers; Attn: Secretary, Y14 Standards Committee; Two Park Avenue; New York, NY 10016-5990.

This Standard was approved as an American National Standard on November 30, 2012.

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# Engineering Drawing and Related Documentation Practices

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**General.** ASME Standards are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this Standard may interact with the Committee by proposing revisions, and attending Committee meetings. Correspondence should be addressed to:

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Two Park Avenue
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http://go.asme.org/Inquiry

**Proposing Revisions.** Revisions are made periodically to the Standard to incorporate changes which appear necessary or desirable, as demonstrated by the experience gained from the application of the Standard. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Standard. Such proposals should be as specific as possible, citing the paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal including any pertinent documentation.

**Proposing a Case.** Cases may be issued for the purpose of providing alternative rules when justified, to permit early implementation of an approved revision when the need is urgent, or to provide rules not covered by existing provisions. Cases are effective immediately upon ASME approval and shall be posted on the ASME Committee Web page.

Requests for Cases shall provide a Statement of Need and Background Information. The request should identify the Standard, the paragraph, figure or table number(s), and be written as a Question and Reply in the same format as existing Cases. Requests for Cases should also indicate the applicable edition(s) of the Standard to which the proposed Case applies.

**Attending Committee Meetings.** The Y14 Standards Committee regularly holds meetings or telephone conferences, which are open to the public. Persons wishing to attend any meeting or telephone conference should contact the Secretary of the Y14 Standards Committee or check our web site at http://cstools.asme.org/csconnect/CommitteePages.cfm?Committee=C64000000.

# ORTHOGRAPHIC AND PICTORIAL VIEWS

## 1 GENERAL

### 1.1 Scope

This Standard establishes the requirements for creating orthographic, and pictorial views on engineering drawing graphic sheets and in models. View requirements are generally the same regardless of how they are created. Specific requirements that are applicable only to constructed or to saved views are defined throughout the standard.

The topics covered include the multiview system of drawing, selection, and arrangement of orthographic views, auxiliary views, section views, details, pictorial views, conventional representation of features with some practices applicable only to constructed views, practices applicable to saved views on drawing graphic sheets, and practices applicable only to saved views in models.

The methods for constructing orthographic and pictorial views are beyond the scope of this Standard. Space geometry and space analysis and applications are included in the appendices for informational purposes.

### 1.2 ASME Y14 Series Conventions

The following conventions in paras. 1.2.1 through 1.2.10 are used in this and other ASME Y14 series of standards.

**1.2.1 Mandatory, Nonmandatory, Guidance, and Optional Words**

*(a)* The words "shall" and "will" establish a mandatory requirement.

*(b)* The words "should" and "may" establish a recommended practice.

*(c)* The words "typical," "example," "for reference," or the Latin abbreviation "e.g.," indicate suggestions given for guidance only.

*(d)* The word "or" used in conjunction with a mandatory requirement or a recommended practice indicates that there are two or more options for complying with the stated requirement or practice.

**1.2.2 Cross-Reference of Standards.** Cross-reference of standards in text with or without a date following the standard identity shall be interpreted as follows:

*(a)* Reference to other ASME Y14 series of standards in the text without a date following the standard identity indicates that the issue of the standard as identified in the references section shall be used to meet the requirement.

*(b)* Reference to other ASME Y14 series of standards in the text with a date following the standard identity indicates that only that issue of the standard shall be used to meet the requirement.

**1.2.3 Invocation of Referenced Standards.** The following examples define the invocation of a standard when specified in the references section and referenced in the text of this Standard:

*(a)* When a referenced standard is cited in the text with no limitations to a specific subject or paragraphs(s) of the standard, the entire standard is invoked. For example, "dimensioning and tolerancing shall be in accordance with ASME Y14.5" is invoking the complete standard because the subject of the standard is dimensioning and tolerancing and no specific subject or paragraph(s) within the standard are invoked.

*(b)* When a referenced standard is cited in the text with limitations to a specific subject or paragraph(s) of the standard, only the paragraph(s) on that subject is invoked. For example, "assign part or identifying numbers in accordance with ASME Y14.100" is only invoking the paragraph(s) on Part or Identifying Numbers because the subject of the standard is engineering drawing practices and part and identifying numbers is a specific subject within the standard.

*(c)* When a referenced standard is cited in the text without an invoking statement, such as "in accordance with," the standard is for guidance only. For example, "for gaging principles see ASME Y14.43" is only for guidance, and no portion of the standard is invoked.

**1.2.4 Parentheses Following a Definition.** When a definition is followed by a standard referenced in parentheses, the standard referenced in parentheses is the source for the definition.

**1.2.5 Notes.** Notes depicted in this Standard in all uppercase letters are intended to reflect actual drawing entries. Notes depicted in initial uppercase or lowercase letters are to be considered supporting data to the contents of this Standard and are not intended for literal