ENGINEERING DRAWING AND
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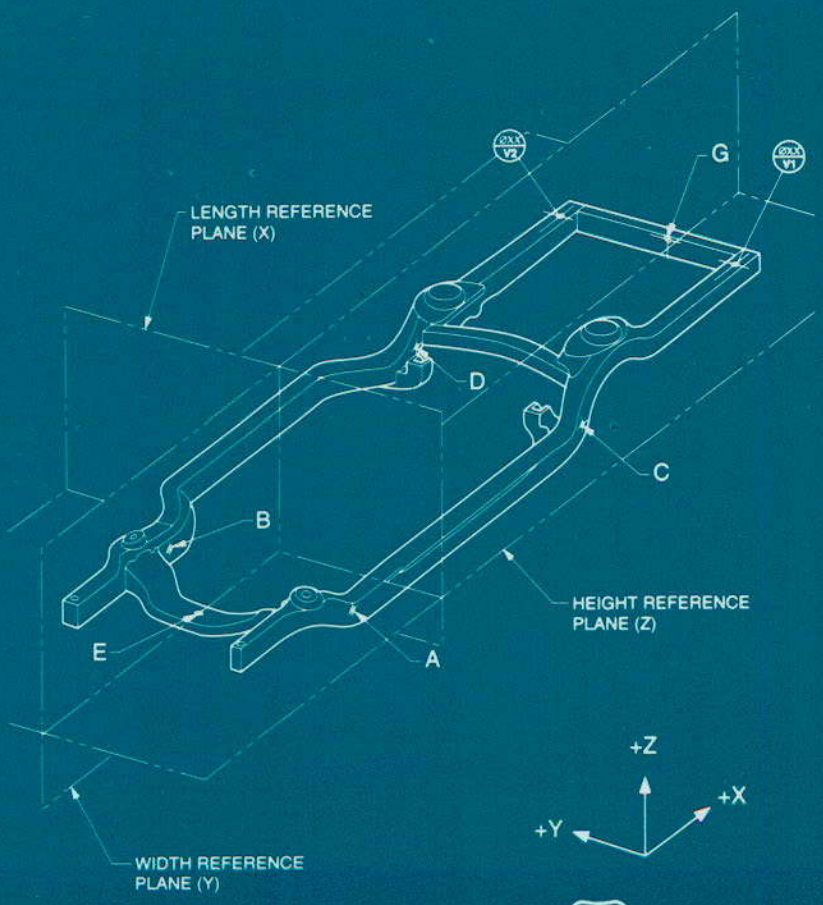
ASME Y14.32.1M-1994

(REVISION OF ANSI Y14.32.1-1974)

REAFFIRMED 2005

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Chassis Frames — Passenger Car and Light Truck — Ground Vehicle Practices



AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

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The American Society of Mechanical Engineers

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FOREWORD

(This Foreword is not part of ASME Y14.32.1M-1994.)

Subcommittee 32 of the ASME Standards Committee Y14, Engineering Drawing and Related Documentation Practices, was organized in 1968. The work of the Subcommittee resulted in the publication of the predecessor to this Standard, ANSI Y14.32.1-1974. During the ensuing years, the Y14 Committee, reacting to the increasing acceptance of the SI metric system in the United States, began to systematically update its existing standards to accommodate metric practices. Since Y14 drafting practices in most cases are dimensionally insensitive, the majority of the metrication effort involved redrawing examples using metric units. ANSI Y14.32.1 was withdrawn as an American National Standard in 1987, at which time work on this Standard began.

The vehicle chassis frame is typically an inseparable assembly of stamped or formed sheet metal structural members which support and locate the vehicle body, front sheet metal structure, chassis components (wheel, suspension, engine, steering components, drive line, exhaust system, bumpers), and miscellaneous equipment. The chassis frame provides accuracy of location as well as strength and rigidity of support for these components to assure satisfactory vehicle performance. Functional criteria and restraints are determined from a number of support drawings and a design check mock-up. These include a definition of mountings and clearances for all related chassis and underbody components, such as underbody and sheet metal structure, engine, drive line, exhaust, suspension systems, tires, brake lines, fuel lines, and bumpers.

In addition to referencing metric (SI) units, this Standard includes the definition of some key terms which are generally accepted in the industries producing ground vehicles. References are made specifically to automobiles, vans, and trucks where such distinctions are necessary. References to *vehicles* are inclusive of all types, as the concepts are generic.

References to rear suspensions are more general than in the previous standard. Since 1974, the number of types of rear suspensions in use has increased beyond the ability of this Standard to adequately cover all applications.

This Standard has been prepared for application with any system of measurement.

Suggestions for improvement of this Standard will be welcomed. They should be sent to The American Society of Mechanical Engineers, Secretary, Y14 Main Committee, 345 East 47th Street, New York, NY 10017.

This Standard was approved as an American National Standard on September 6, 1994.

ASME STANDARDS COMMITTEE Y14
Engineering Drawing and Related Documentation Practices

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ENGINEERING DRAWING AND RELATED DOCUMENTATION PRACTICES

CHASSIS FRAMES — PASSENGER CAR AND LIGHT TRUCK — GROUND VEHICLE PRACTICES

1 GENERAL

1.1 Scope

This Standard establishes minimum requirements for the preparation of engineering drawings for passenger car and light truck chassis frames.

This Standard does not apply to heavy truck, trailer, tractor, and off-the-road vehicle chassis frames.

1.2 Units

The International System of (Metric) Units (SI) is featured in this Standard because SI units are expected to supersede United States (U.S.) customary units specified on engineering drawings. Customary units could equally well have been used without prejudice to the principles established.

1.3 Notes

Notes herein in capital letters are intended to appear on finished drawings. Notes in lower case letters are explanatory only and are not intended to appear on drawings.

1.4 Reference to Gaging

This Standard is not intended as a gaging standard. Any reference to gaging is included for explanatory purposes only.

1.5 References

When the following American National Standards referred to in this Standard are superseded by a revision approved by the American National Standards Institute, Inc., the revision shall apply.

ASME Y14.5M-1994, Dimensioning and Tolerancing

ASME Y14.24M-1989, Types and Applications of Engineering Drawings

Y14.31M (in preparation), Undimensioned Drawing Practice

1.6 Definitions

The following are defined as their use applies in this Standard.

1.6.1 Vehicle Mounts (Body and Front Sheet Metal). The area where the body and chassis frame contact. This contact is made through rubber insulators, retained with fasteners.

1.6.2 Box Mounts. The location where a truck box is rigidly mounted to the vehicle frame.

1.6.3 Compression (Jounce) Position. The position of vehicle suspension travel which represents the allowable compression of the suspension. Generally, the springs are not fully compressed, but the travel is limited by stops or bumpers.

1.6.4 Design Check Mock-Up. An assembly (usually full scale) of components used to verify the design. These components may be actual production or representative parts made of fiberglass, cardboard, plastic, or other easily formed materials. This mock-up is used to check for clearances and interferences and as a visual aid for the designer when mounting or routing other components.

1.6.5 Design Load. A value assigned to a vehicle to represent a nominal load.

1.6.6 Design Position. The position of vehicle suspension travel at which the vehicle is designed. This position represents the design load.

1.6.7 Front Suspension Arm. Components of the vehicle suspension, mounted between the frame and steering knuckle, which allow vertical movement of the wheel assembly.

1.6.8 Rebound Position. The position of vehicle suspension travel which represents the fully extended travel of the components of the suspension. This travel is usually limited by the full extension of the shock absorbers, or rebound stops.