TYPES OF PRINTS & ENGINEERING DRAWINGS 132

Class Vocabulary

Term	Definition
Acceptance Tests	A procedure to determine whether a product or process meets requirements upon delivery and use. Acceptance tests are often part of a product's test plan.
Altered Item Drawing	A type of modifying drawing detailing physical changes to an existing part. Altered item drawings are often a result of redesigns or safety issues.
Alternate Parts Drawing	A list of related and interchangeable parts. Alternate parts drawings help eliminate the need for redesigns.
American National Standards Institute	ANSI. A private, non-profit organization that administers and coordinates voluntary standards and systems. The American National Standards Institute writes nationally approved standards for the manufacturing industry.
American Society For Mechanical Engineers	ASME. An organization that publishes technical materials and sets industrial and manufacturing standards. Along with International Organization for Standardization, ASME provides written standardization for prints.
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ASME Y14.5-2018	The standard for geometric dimensioning and tolerancing published by the American Society of Mechanical Engineers (ASME). The ASME 14.5 2018 revision is the most recent version of the standard.
Assembly	A manufacturing process in which two or more components are joined together to create a finished part. Assembly may include the use of fasteners, adhesives, or welding to attach parts to one another.
Assembly Drawing	An engineering drawing used to represent products made up of more than one part. Assembly drawings show how parts fit together, and instructions for installation.
Bearings	A friction-reducing device that allows one moving part to glide past another moving part. Bearings operate using a sliding or rolling mechanism.
Block Diagram	Representation of a system in which components are represented by blocks and relationships are shown as lines. Block diagrams include drawing trees.

Blueprints	A hardcopy document that details all the instructions, including size, shape, and material, for manufacturing and inspecting a part. Blueprints have three main elements: the views, their dimensions, and notes.
Building Schematics	A diagram that illustrates the features of a structure at an abstract level. Schematics use symbols and notes to represent details and the location of features.
Circuit	A controlled path for electricity. A circuit includes a source, path, load, and control.
CNC Mill	A machine tool that uses computer numerical data to control cutting operations on flat, square, or rectangular workpieces. On a CNC mill, the cutting tool rotates against a workpiece that is fixed to a worktable.
Compliance Tests	A procedure used to determine whether a product and process meets specified requirements. Compliance tests are often part of a product's test plan.
Computer-Aided Design	CAD. A computer software program that aids in the automated design and technical precision drawing of a part, product, process, or building. A Computer-aided design model can be used like a part drawing.
Connection Diagrams	An electrical system drawing using symbols to show wire arrangements in internal connections. Connection diagrams are a type of electrical system drawing.
Corrosion	A process by which a material gradually degrades or wears away. Corrosion typically occurs when a material is exposed to atmosphere, moisture, or other substances.
Detail Drawing	An engineering drawing document providing a precise description of the geometric form of a product and its complete design. Detail drawings tend to be larger scale in order to provide adequate detail.
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Dimensions	The desired measurement of a feature on a part. A dimension is listed as a number given in the appropriate units.
Drawing Tree	A diagram listing all drawings related to a finished product in hierarchical order. Drawing trees are helpful when referencing previous part drawings.
Electrical Prints	An engineering drawing containing all the information needed for an electrical project. Electrical prints are useful for designing, constructing, and troubleshooting circuits.
Engineering Drawings	A two-dimensional illustration that details all the instructions, including size, shape, and material, for manufacturing and inspecting parts and systems. Engineering drawings have three main elements: the views, their dimensions, and notes.
Fasteners	A device that holds objects together or locates them in relation to one another. Common fasteners include bolts, screws, and rivets.

Finishing	A final process performed on a part. Finishing processes include cleaning, final sizing, polishing, and applying coatings.
First-Angle Projection	A perspective in engineering drawings with the top view under the front view. First-angle projection is the European standard for engineering drawings.
Geometric Dimensioning And Tolerancing	GD&T. An international standard for communicating instructions about the design and manufacturing of parts. Geometric dimensioning and tolerancing uses universal symbols and emphasizes the function of the part.
Geometric Product Specification	GPS. An international symbol language used to demonstrate tolerances and forms in technical drawings. Geometric product specification is used in ISO drawings.
Hierarchical	Grouping items in lowest to highest according to quality, importance, or other ranking factors. Hierarchical representations are used for drawing trees.
Hydraulic Systems	A type of fluid power system that uses oil or another liquid under pressure to transmit mechanical power. Hydraulic systems can be represented by mechanical system drawings.
Installation Drawings	An engineering drawing providing information for properly positioning parts relative to their supporting structure and mating parts. Installation drawings include installation instructions, dimensions, necessary tools and hardware, and general configuration.
Interconnection Diagrams	An electrical system drawing using symbols to show wire arrangements in external connections. Interconnection diagrams are a type of electrical system drawing.
Interface Drawings	A document representing compatible parts that function together. Interface drawings, sometimes called source control drawings, ensure compatibility for parts that share boundaries, and control changes that would effect the whole system.
International Organization For Standardization	ISO. An organization that establishes documented standards, rules, and guidelines to ensure that products, processes, and services are fit for their purpose. Along with American Society of Mechanical Engineers, ISO provides written standardization for prints.
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ISO 128	The standard about the general principles of engineering drawings, specifically the illustration of objects. ISO 128 has fifteen parts, or sub-standards.
ISO 8015	A standard on a geometrical product specification. ISO 8015 expands upon and updates general rules in ISO 128.
Layout Drawings	An engineering drawing depicting the overall form of a part for product development purposes. Layout drawings are a more generalized drawing and often used to develop further drawings such as those for assembly.

Load	The overall force that is exerted onto a material or structure. Loads, such as weights that need to be carried or moved, are the opposition to applied forces.
Mechanical System Drawings	Document used to demonstrate complex systems that function together. Mechanical system drawings are often used in construction for heating and cooling systems.
MIL-STD-100	Military Standard 100. Established requirements and reference documents for prints. MIL-STD-100 was developed by the United States Department of Defense, and led to the development for private sector standards by ANSI and ASME.
Modifying Drawings	An engineering drawing created to add, remove, or redesign parts to meet product requirements or customer needs. Modifying drawings may resolve problems, such as safety issues or maintenance complications.
Mono-Detail Drawing	An engineering drawing showing the complete design of a single part. Mono-detail drawings provide all features of a single part for clarity.
Multi-Detail Drawing	An engineering drawing showing two or more complete parts in separate views. Multi-detail drawings depict parts that are related to one another.
Notes	Any information that applies to the entire part on a print. General notes are usually located next to the title block and contain information such as required testing and surface finish.
Pneumatic Systems	A power transmission system that uses the force of flowing gases to transmit power. Pneumatic systems can be represented by mechanical system drawings.
Polishing	An abrasive finishing process used to improve the surface of a part to a very fine finish. Polishing results in a smooth and shiny part surface.
Production Tests	A procedure performed during the manufacture of a product to determine whether that product meets requirements and quality standards. Production tests are often part of a product's test plan and are done in an ongoing manner.
Projections	Multiple views of a part in an engineering drawing. Projections in drawings are usually first-angle and third-angle.
Proprietary	A product whose rights are owned by the company that designed it. Proprietary products can be used only with the permission of the owner.
Regression Tests	A procedure to determine whether a product meets requirements and function after a change in operating environment. Regression tests are often part of a product's test plan.
Selected Item Drawing	A type of modifying drawing describing new inspection and acceptance requirements for an existing part. Selected item drawings do not cover physical changes, but changes may be necessary due to inspection updates.
Service Repair Tests	A procedures to determine whether a product meets requirements throughout its use and lifespan.Service repair tests are often part of a product's test plan.

Single-Line Drawings	A drawing representing the path of a system using one line and standardized schematic symbols and notes. Single-line drawings are often used for three-phase power systems.
Source Control Drawings	A type of specification control drawing representing compatible parts that function together. Source control drawings, sometime called interface drawings, ensure compatibility for parts that share boundaries, and control changes that would effect the whole system.
Specification Control Drawings	A type of engineering drawing that provides a description, requirements and inspection specifications for parts purchased from or developed by outside vendors. Specification control drawings ensure compatibility and functionality of the procured parts.
Specifications	A description of the essential physical and technical properties of a part. Specifications include information on the shape and tolerance of a part as well as required mechanical and physical properties.
Standards	An established policy regarding a particular practice or method. ISO and ASME develop standards for prints.
Subassemblies	Units that are put together independently but meant to be connected with other parts to make a larger product. Subassemblies are often represented in separate assembly drawings.
Test Plans	A strategy for verifying that a product meet design specifications. Test plans should include test coverage, test methods and test responsibilities.
Third-Angle Projection	A perspective used in engineering drawings with the front view under the top view. Third-angle projection is the American standard for engineering drawings.
Tolerances	A specification indicating an unwanted but acceptable deviation from a given dimension. Part tolerances are indicated on engineering drawings.
Vendor Item Control Drawings	A type of specification control drawing used for specialized industries such as aerospace. Vendor item control drawings provide requirements for purchasing specialized parts.
Welding	A joining process that uses heat, friction, or a combination of methods to fuse two materials together permanently. Welding is used in a variety of industries from auto manufacturing to aerospace engineering.