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GUESTS IN ASSEMBLY DRAWING

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ABSTRACT
This article provides feedback on assembly drawing.

Keywords: drawing, hatching, drawing, detail, scale, specification

A person who is not familiar with assembly drawings may not understand anything at first sight of them. It is difficult for him to start reading from which of the confusing lines in the drawing, to understand the working process of the unit depicted in the drawing. Knowing this feature, the teacher tells students the importance of sequence and step-by-step reading of assembly drawings, including projection connections of images, hatching in cuts, various auxiliary images performed in the drawing, specification and others are of great help.

What are the most common mistakes students make when reading assembly drawings? To these, an attempt to determine the shape of the detail from one of the images is usually attempted to find it from the clipping depicted in the output line, which often indicates the position number of the detail. Avoiding such a mistake should always be the teacher's focus. Often, when the reader goes to determine the incomprehensible shape of a detail from another image, he forgets the rules of projection connection and looks for the image of the detail in a place where it cannot be located.

One of the fairly common errors in the process of detailing is that the contour lines belonging to another intermediate detail are preserved in the outline of the detail being depicted. The opposite error is that students do not show in the drawing the lines that are not in the assembly drawing, but appear after the part that penetrates the part is removed. As an example, we can show the cut of the unit where the shaft passes through the cylindrical hole of the housing. By performing this cut without a stock, the reader leaves the transition line (which is formed at the intersection of two cylindrical holes) without describing it.

It is allowed not to show a number of elements such as chamfering, combing, etc. Also, the gap between the hole and the stem is not shown. Students, when drawing from assembly drawings, often forget that it is necessary to recreate these "not shown" elements on the drawing, that is, to show the chamfer on the shaft end or hole.

An assembly drawing is a necessary document for its assembly (preparation) and control, which includes an image of an assembly unit and other information. Assembly drawings are included in the set of working documents and are intended for production. The drawing of the assembly unit improves at all stages of the design of the building. In the stages of improvement of the design documents, it is called a general drawing, and in the stages of execution of the working document, it is called a summary drawing.

The general drawing is specified in GOST 212-96 as a construction document and is performed according to GOST 2119-96, GOST 2103-96. The overview drawing is intended to determine the structure (construction) of the product, and provides information on the interconnection of its components and the principle of operation. General view drawing is used for preparation of specification, detail drawing and assembly drawing of the item for preparation of working documents.

An assembly drawing is a representation of an assembly, which provides an understanding of the location and relationship of the components of the assembly according to the drawing, and provides assembly and control of the part. . Assembly drawings include drawings of complete machines or machines consisting of several assembly units and parts, as well as hydroassembly, pneumatic assembly, and electrical assembly drawings. The assembly drawing is performed according to the working drawings or sketches of the details included in the product. The execution of the working drawing of each detail according to the assembly drawings is called division into details. The working drawing of details included in the assembly drawing of the item (except for standard details) is drawn up according to GOST 2109-96.

Before drawing the assembly drawing in detail, it is necessary to read and understand the drawing, and then identify the components that go into the item depicted in the assembly drawing. It is recommended to read the assembly drawings in the following order:

- The name of the item, its scale and the name of the designing organization, as well as the principle of operation of the item, are determined from the main entry of the drawing.

The main and additional images of the assembly drawing, views, cuts and sections, what material it is made of are determined.

- The specification of the drawing will be introduced.

Using the specification, the shape of each detail is analyzed.

1. The nature of joining together of all the details that make up the item (separable and non-separable connections and the fixing details included in them) is determined.
2. Other information given in the drawing (dimensions, technical requirements, etc.) are determined.

After reading the assembly drawing, it is started to be divided into details. It is recommended to draw the assembly drawing of the item in detail in the following order:

3. The number of details to be drawn on the working drawing is determined.
4. The scale and format of the drawing is determined. The formatter depends on the complexity and number of details, and space is allocated for the main notes.

- The number of main and auxiliary views of each detail, the necessary cuts and sections are determined.
- For each detail, its working drawing is drawn in a separate format; main and auxiliary views, cuts and sections are defined. The drawing's dimensions, contours and offsets are set.
- In each format of the drawing, the main entry related to this detail is written. Then a keynote is written that applies to all drawings. The scale of an assembly drawing can be determined in two different ways. One of these methods is used to draw a working drawing of assembly drawing details.

In order to determine the dimensions of the details graphically, a piece of mm paper is taken and the first quarter of the Cartesian coordinate system is drawn on it. Points A and V are found by putting the original size of the detail described in the assembly drawing along the OX axis, and the size of the detail measured from the assembly drawing along the OU axis. Then connecting rays are passed through these points and point Q is formed. Scale beam (OQ) is formed by connecting points O and Q. With this beam, you can find the original dimensions of any detail that goes into the assembly drawing. This is done as follows.-From the assembly drawing, the size of a part of the detail is measured, starting from point O on the OU axis, point D is formed;

- by shooting a connecting ray from point D, point F is found;
- the point G intersected by the connecting beam from the point F with the axis OX is found;

-OG section length is equal to the original size of the desired part of the detail.

This scale graph allows you to draw the details given in the assembly work drawing at any scale. The arrangement of detail images in the work drawings does not necessarily have to be similar to the training drawings. All views, cutting, sectioning and other images are performed according to the guidelines recommended in GOST 2305-96. The scale of the images is selected for each detail, taking into account its shape and size. The more complex the shape of the detail, the more contours and dimension lines are added to the drawing. Therefore, it is necessary to draw images of such details on a large scale.

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