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IMPORTANCE IN THE DEVELOPMENT OF THE ASSEMBLY DRAWINGS AND IN THE LEARNING PROCESS

AM Rustamov* ; AA Shovdirov**

^{1,2}Teachers,

Department of Fine Arts and Engineering Graphics,
 Navoi State Pedagogical Institute,
 Republic of UZBEKISTAN

ABSTRACT

Drawing - is the basis of all the fine arts and engineering graphics. Regardless of which type of art the specialist creates, it is based on the drawing. Therefore, the state supports gifted and talented young people: awards, scholarships, educational grants in the manner prescribed by law; Promoting the establishment of creative workshops and schools in the field of science, culture and art is one of the main priorities of the country.

KEYWORDS: *Drawing, Design, Assembly Drawings, Product, Design Feature, Detail Shape, Details Specification, Creative And Scientific, Standard Detail, Cut And Cut, Specifications, Seam, Linear Structural Structure, Center Of Gravity, Product Function, Structure And Principle Of Operation.*

INTRODUCTION

CREATE AND READ ASSEMBLY DRAWINGS

Methods of drawing and reading and designing drawings are best learned only when drawing drawings of details and items independently and satisfactorily knowing all the rules adopted in the standard.

I. Drawing assembly drawings. Assembly drawings are usually made when designing new items and depending on the existing items themselves. Depending on the product itself, it is recommended to make its assembly drawings in the following order.

1. The product is carefully inspected, its function, working principle and design features are determined.

2. The item is divided into assembly units and parts. The shapes, elements of all details of a product, methods of their interaction with each other are defined.
3. A specification of the assembly units and all details included in the product is made.
4. A sketch of each detail (except for standard details) that is part of the product is made.
5. The number, views, cuts and sections of the main additional images of the item are determined.
6. Depending on the complexity and size of the item, the scale of the assembly drawing is selected.
7. The format of the list is selected in accordance with GOST 2.301-68. The frame lines of the list are drawn thinly. Space is left for the main record.
8. The list is planned: the axes of symmetry of each image are drawn.

The location of each view, cut, and cut, as well as additional views, is determined

9. The contours of all images of the main (body of the object and the like) detail at the same time, and then all the images of the smaller details, are drawn with a thin line.
10. All cuts and cuts of the drawing are made and is barred.
11. Dimensions of the drawing and, if necessary, methods of transfer of details are poured.
12. The contour lines of the drawing are thickened in accordance with GOST 2.303-68, first the axis, center and dimension lines, circles and curves, then the main straight lines are thickened.
13. Location numbers of details are put.
14. The main note and specification of the drawing are filled. If necessary, technical specifications are written.

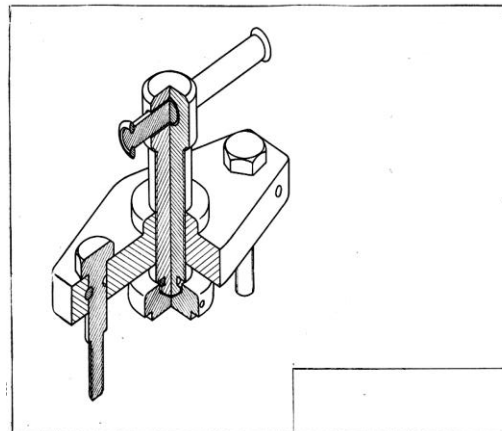
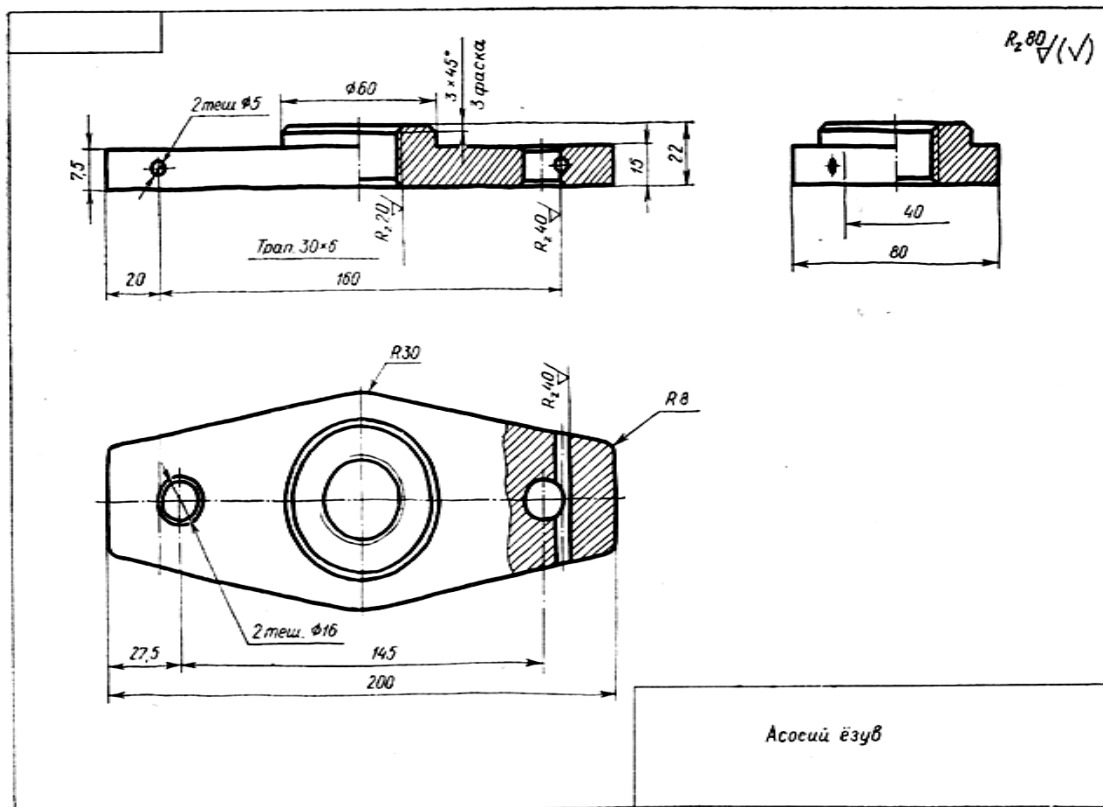


Figure 2



Every detail in the assembly drawing must be hatched to one side in the cuts and sections of all its images.

The most extreme positions of the moving parts of the item (valve, handle, spindle, piston, etc.) should be indicated on the assembly drawings by thin bar-dotted lines.

Depending on the item itself, the assembly drawing can be seen in the example of a syringe given in Figure 1. Syomnik consists mainly of traverse, screw and heel.

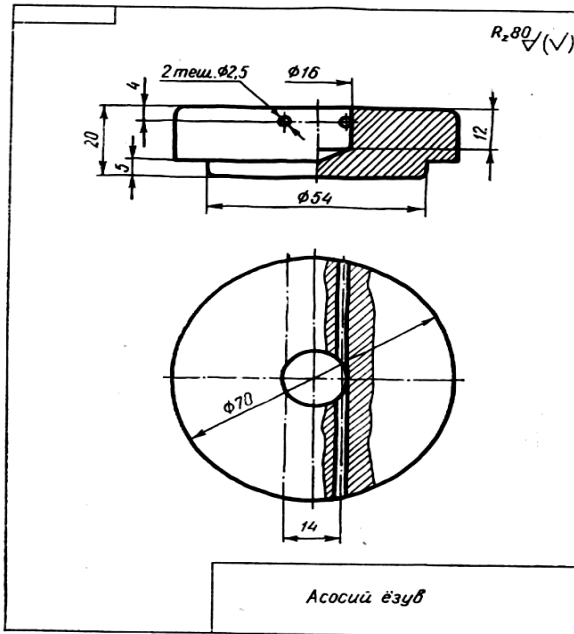


Figure 3.

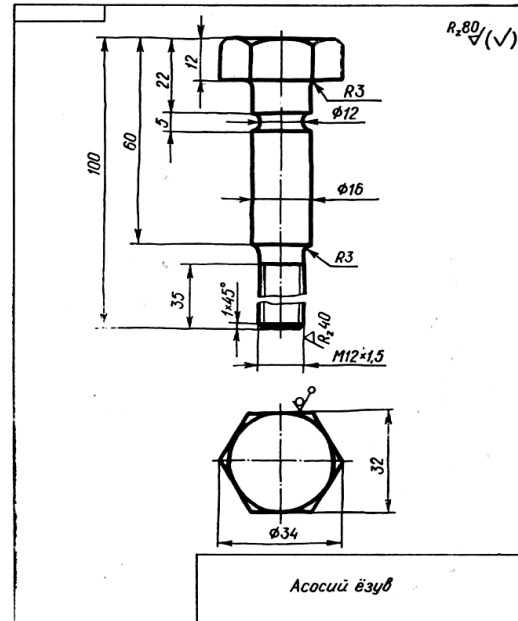
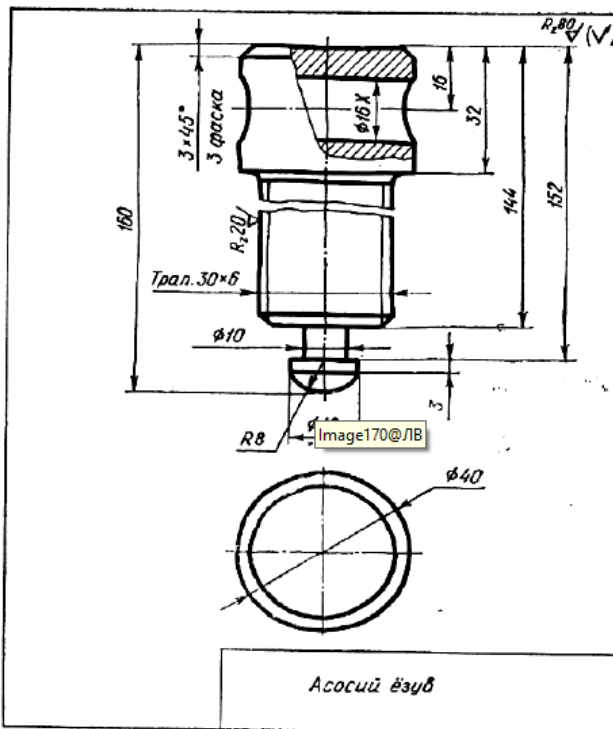


Figure 4



It is recommended that you read the assembly drawings in the following order.

Figure 5.

Figures 2-6 show sketches of the details of the syomnik. Figure 7 shows the assembly drawing of the syringe, and Figure 8 shows the specification of the details that make up the syringe.

II. Read the drawing. Reading drawings - the task of the described object is to determine the structure and principle of operation, the relative position of the details, their attachment, their relationship to each other and to visualize them.

1. The name, scale and name of the design organization are determined from the main text of the drawing.
2. The principle of operation of the product is determined.
3. The main and additional images, views, cuts and sections of the assembly drawing are determined.
4. Get acquainted with the specification of the drawing; the name, material, geometric shape, and design features of each detail are determined.
5. The nature of the connection of all the parts that make up the product is determined: detachable and inseparable joints and fasteners and elements that are part of them.

Let us consider the reading of the assembly diagram in the example of the assembly diagram of the pneumatic apparatus with valves given in Fig. 9, and its specification given in Fig. 10. Its name and scale can be deduced from the main record of the assembly drawing. From the given specification of the valve pneumatic device its components are defined (Fig. 10). The three main views (front, top and left) given in the assembly drawing are determined by local cuts and sections (A-A), as well as the name, number and material of each detail in the drawing specification.

Figure 6

The valve pneumatic apparatus consists of a body 6, a valve 1, a propeller 4, a spring 5, a gasket 3. The valve handle is fastened to the housing with a thread. The bobishka on the body is covered with a spring and is pushed to the surface of the propeller with the other end.

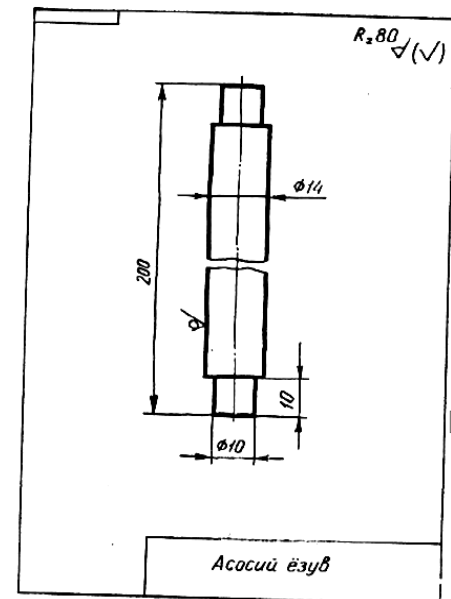
The profile of the valve is shown in section A-A.

After getting acquainted with the structure and design of the valve pneumatic apparatus, the structure, shape and other structural features of each part of the unit are determined.

To determine the shape of each detail and its elements, the external and internal contours of all the given images are carefully examined.

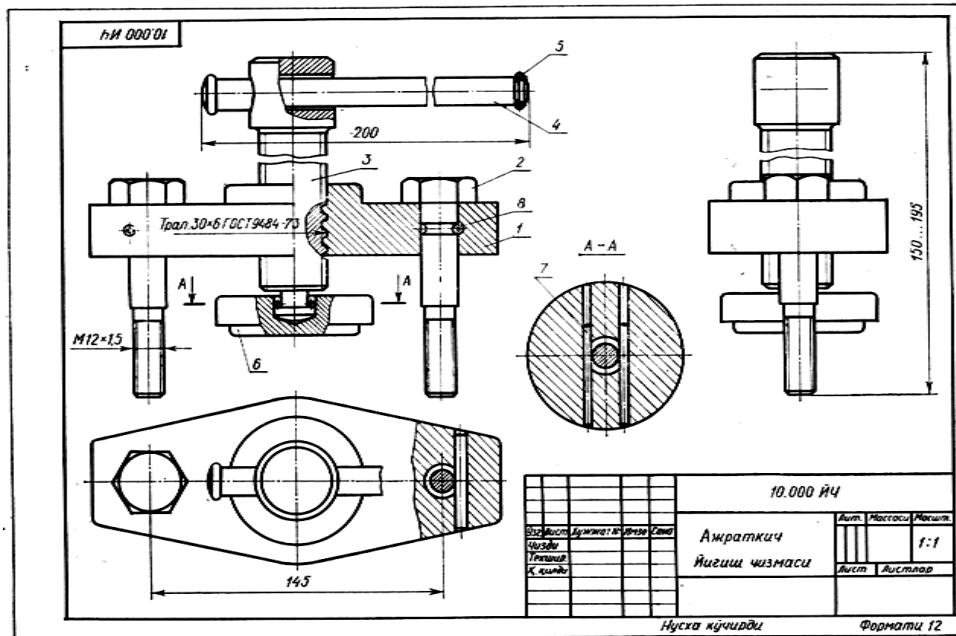
III. Technological features of assembly processes and their representation in drawings.

In the product, the details are assembled using interchangeable and non-detachable joints. In detachable joints, details are fastened together with bolts, screws, studs, pins, dowels and the like. In non-separable joints, the parts are assembled by riveting, welding, pressing, brazing, gluing, pressing in the mold with rubber, pressing with plastic, liquefaction of metal and so on.



For quick and easy assembly of items, it is necessary to correctly describe the attachment details in their assembly drawings. For example, in a bolted joint of two flanges (Fig. 11, b), it is not possible to describe the nut as being located on the left, because in this case the bolt cannot be installed in the hole of the flanges; this is hindered by the bulging M part of the detail on the right.

Figure 7



In order to save the time required to process the bushings in the pressed holes and to reduce the wear of the cutting tools, the diameters of the inner cylindrical surfaces of the casting parts are machined larger (Figure 12 a).

The length of the step bushings inserted into the holes should be shorter than the depth of the hole to prevent bending (Fig. 11, a). In the assembly drawings, the sealing sleeve of the seals is described as having 1 ÷ 2 mm of penetration into the sealing hole, as shown in Figures 13-14.

Figure 8

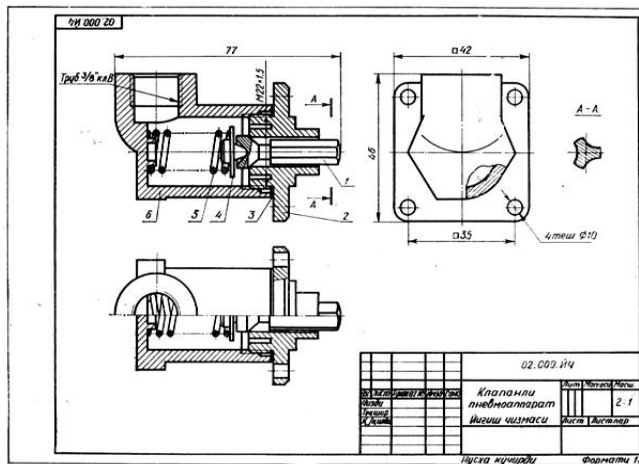


Figure 9

№	Билвос	Лаз	Велгиси	Номи	Сани	Зелатма
				Хўжматлар		
12			10.000 ИЧ	Илгич чизмаси		
				Деталлар		
	1		10.001	Траверса	1	
	2		10.002	Болт	2	
	3		10.003	Винт	1	
	4		10.004	Даста	1	
	5		10.005	Халка	1	
	6		10.006	Пята	1	
				Стандарт буюмлар		
	7			Штифт 4п 6×40 ГОСТ 3128-70	2	
	8			Штифт 5п 6×40 ГОСТ 3128-70	2	
10.000 ИЧ						
Узг	Лист	Хўжмат №	Имзо	Сана	Лит	Лист
Чил	Лист					Листлар
Телм						
К.Килди						
Ажраткич						
Нуска кўчирди				Формати 11		

Б02- шакл.

Формат	Зимати	Лист	Белгиси	Номи	Сони	Эслатма
				Хужжатлар		
22			02.000.ЙЧ	Илгиш чизмаси		
				Деталлар		
	1		02.001	Клапан	1	
	2		02.002	Клапан ушлагич	1	
	3		02.003	Кистирма	1	
	4		02.004	Турткич	1	
	5		02.005	Пружина	1	
	6		02.006	Корпус	1	

02.000			
Узв. лист	Хужжат №	Имзо	Сана
Чагда			
Текшир.			
К.Калди			
02.000		Лит. лист листлар	
Клапанли пневмоаппарат			
Нусха кучируди		Формати 11	

Figure 10

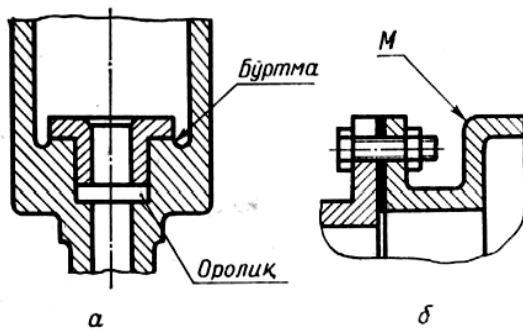


Figure 11.

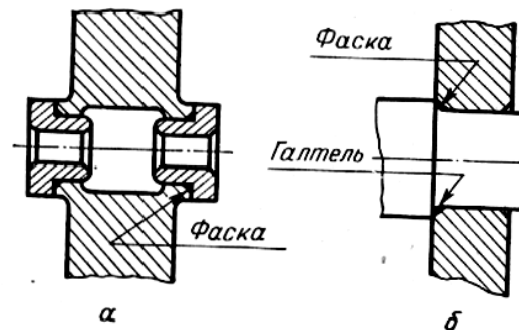


Figure 12

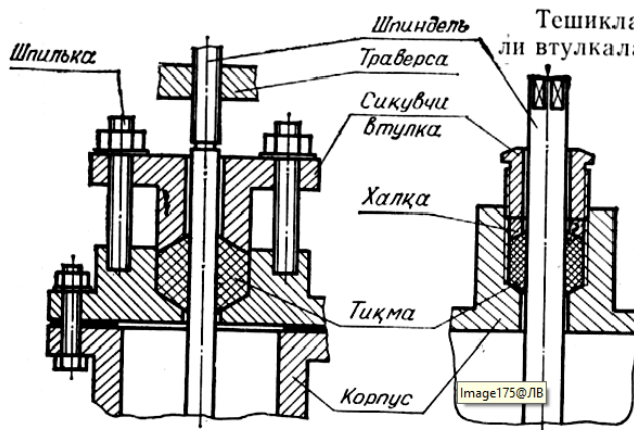


Figure 13.

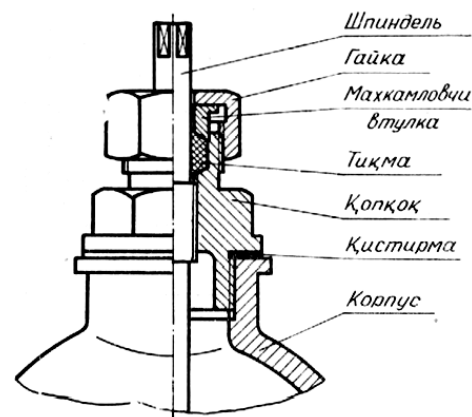


Figure 14

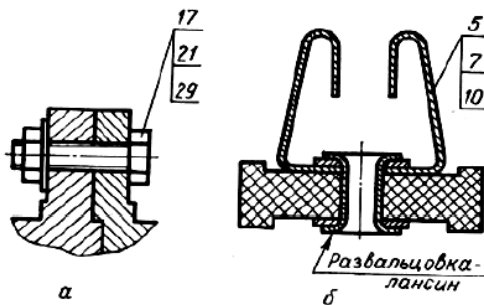


Figure 15.

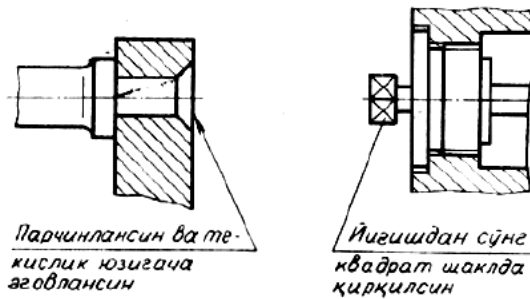


Figure 16

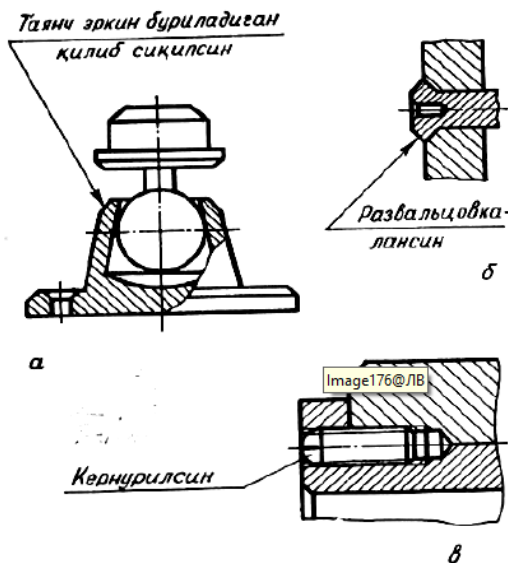


Figure 17.

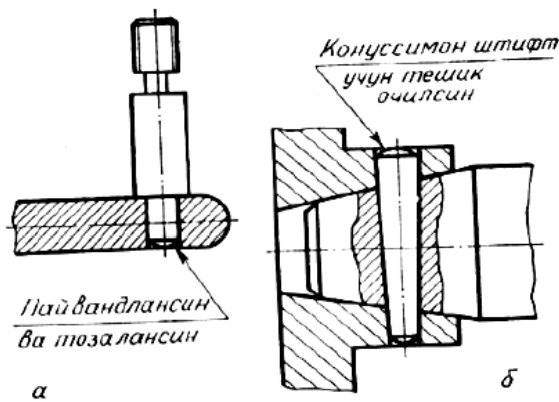


Figure 18

Holes shall be provided in the holes through which the bushing is to be made, with a gap between the chamfer and the bushing (Fig. 12, b). Such constructive work provides the necessary combination of details.

In assembly drawings, special technological processes performed during the assembly process are represented by short entries, as shown in Figures 15-20.

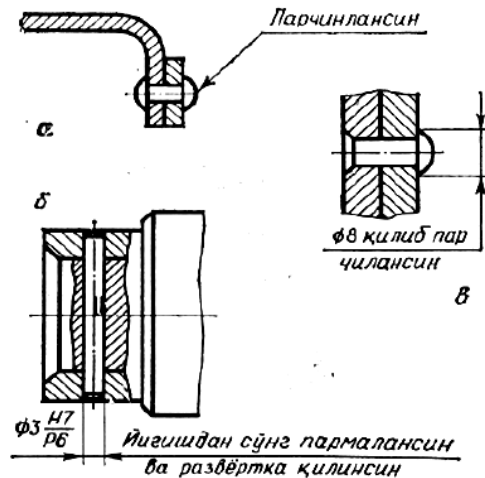


Figure 19.

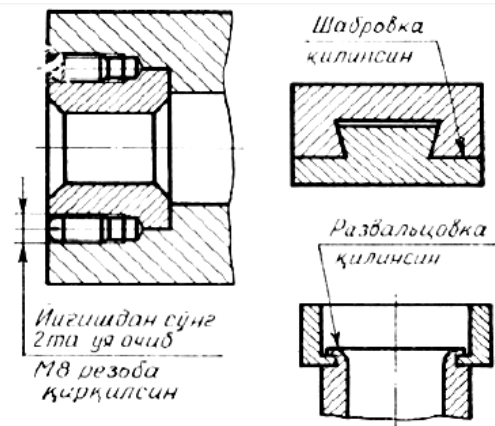


Figure 20

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