

## LEAVING CERTIFICATE EXAMINATION, 1978

## TECHNICAL DRAWING - COMMON LEVEL - PAPER II

MONDAY, 19 JUNE 9.30 - 12.00

## Section A (Engineering)

## INSTRUCTIONS

- (a) All questions to be attempted.
- (b) Drawings and sketches should be in pencil unless otherwise stated.
- (c) Where dimensions are omitted they may be estimated.
- (d) Credit will be given for neat orderly presentation of work.
- (e) Candidates should work on one side of the paper only.
- (f) The Examination Number should be written on each drawing sheet used.

1. The parts of a bearing and oil seal assembly are shown in Fig. 1. Assemble the parts together and draw full size in orthographic projection:-

- (i) a sectional elevation on the cutting plane X - X,
- (ii) an end elevation in projection with (i) and viewed from right to left.

Show one hexagonal headed set screw in both views, no other set screws are required to be shown. The solution should include the title 'BEARING ASSEMBLY' the I.S.O. symbol for projection and four leading dimensions.

Guide to assembly. Assemble the bearing, part 5, to the shaft, part 6, and secure with the nut, part 4. Place the bearing in the housing, part 2, and fit the oil seal, part 3, over the shaft and secure with six hexagonal headed set screws to the housing. The cover, part 1, is finally assembled to the housing and secured with four hexagonal headed set screws.

(100 marks)

2. An exploded view of a thrust bearing assembly is shown in Fig. 2. Sketch freehand two views of the assembly in orthographic projection. One of the views sketched should be in section. Pick views that will describe the assembly most clearly. The cap is secured to the base with two M12 hexagonal headed set screws which should be included in the solution.

The sketch should be in good proportion to the dimension given and be freehand on the plain paper provided.

(50 marks)

3.(a) Two views of a casting are shown in Fig. 3. Trace, in ink, directly from the question paper a sectional elevation of the casting. The section should be taken at the cutting plane A - A and viewed in the direction of the arrows.

OR

(b) An assembly drawing of a diaphragm regulator is shown in Fig. 4.

Make a fully dimensioned drawing of the cover, part 2. The dimensions for the drawing should be taken from the scale given with Fig. 4. The drawing should be full size in orthographic projection. The number and types of views required for a working drawing are left to the discretion of the candidate.

(50 marks)

OVER →



SECTION B (BUILDING)

INSTRUCTIONS

- (a) Answer four questions.
- (b) All questions carry equal marks.
- (c) Construction lines must be shown on all solutions.
- (d) Write the number of the question distinctly on the answer paper.
- (e) First or third angle projection may be used.
- (f) All measurements are given in millimetres.

1. Fig. 1 shows the plan and elevation of a canopy to a wall. The curves in the elevation are parabolas. Determine the shadows cast in plan and elevation when the direction of the light is  $45^\circ$  in elevation and  $45^\circ$  in plan. Scale 1 : 50

2. The plan and elevation of a building are shown in Fig. 2. Make a perspective drawing of the building when the station point (spectator) is as shown, the picture plane 12000 from the station point and the horizon line 2500 above the ground line. Scale 1 : 100

3. Fig. 3 shows the incomplete elevation of a newel post and a handrail whose cross-section is also shown. The newel post is circular in cross-section. The rise for each step of the stairs is 165 and the width of each tread is 275. Complete the elevation showing the interpenetration of the handrail with the newel post and draw a development of the newel post showing the outline of the handrail on it. Scale 1 : 1

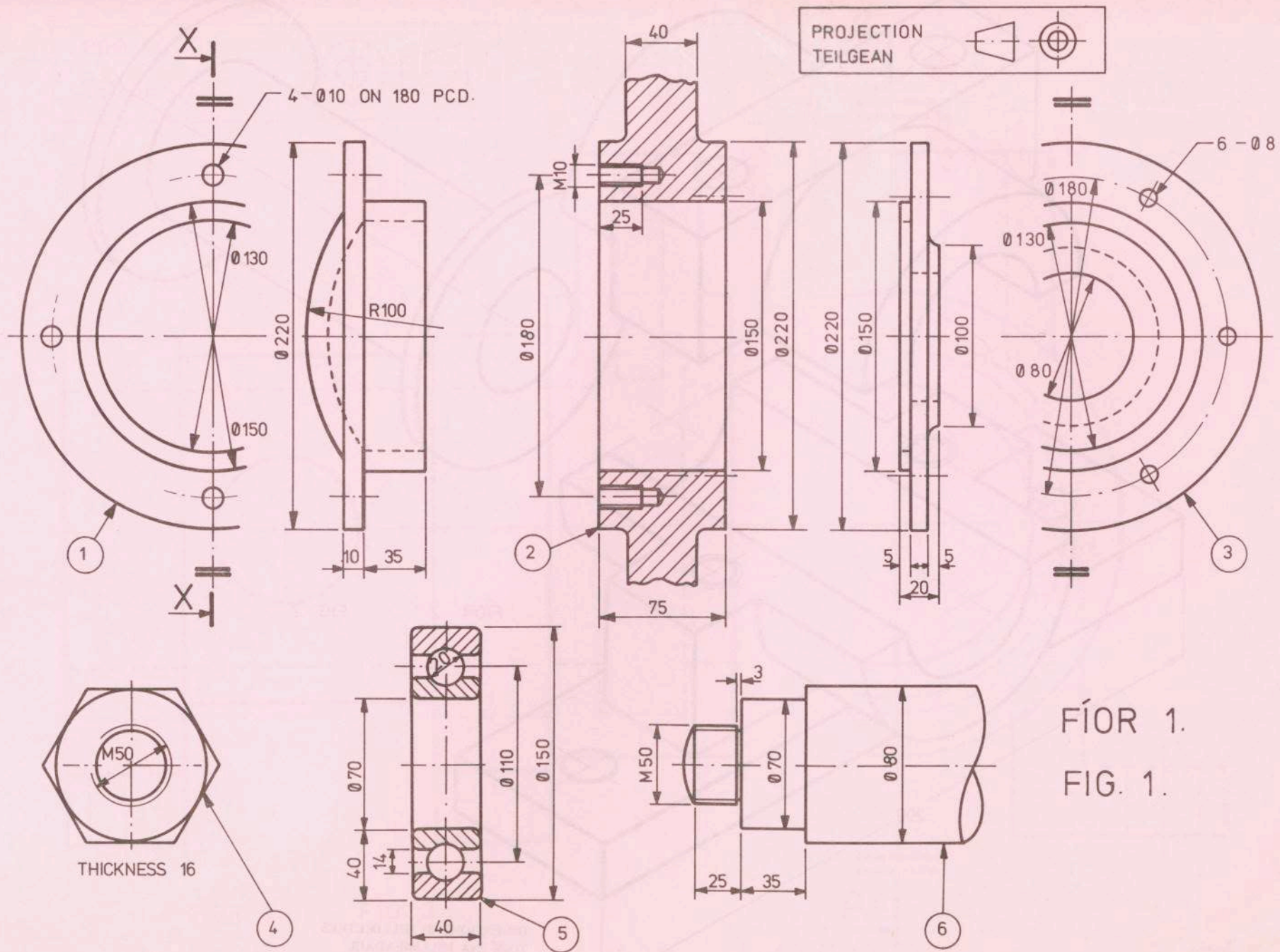
4. Fig. 4 shows the elevation and end view of a buttress to a wall. Draw the given views, project the plan, and show a development of the surfaces. Scale 1 : 10

5. Fig. 5 shows the plan of three lean-to roof surfaces. Surface A has a pitch of  $40^\circ$ . Draw the plan and project the elevation. Find the pitch of surfaces B and C and determine the dihedral angle between surfaces A and B. Scale 1 : 100

6. The plan and section of a precast concrete step for a spiral stairs are shown in Fig. 6. Draw an isometric view of the step. Point X should be the lowest point of the isometric drawing. Scale 1 : 5

7. Fig. 7 shows the plan and elevation of a turret roof. Draw the given views, determine the true shape of the rib AB and develop the surface ABCD. Scale 1 : 10





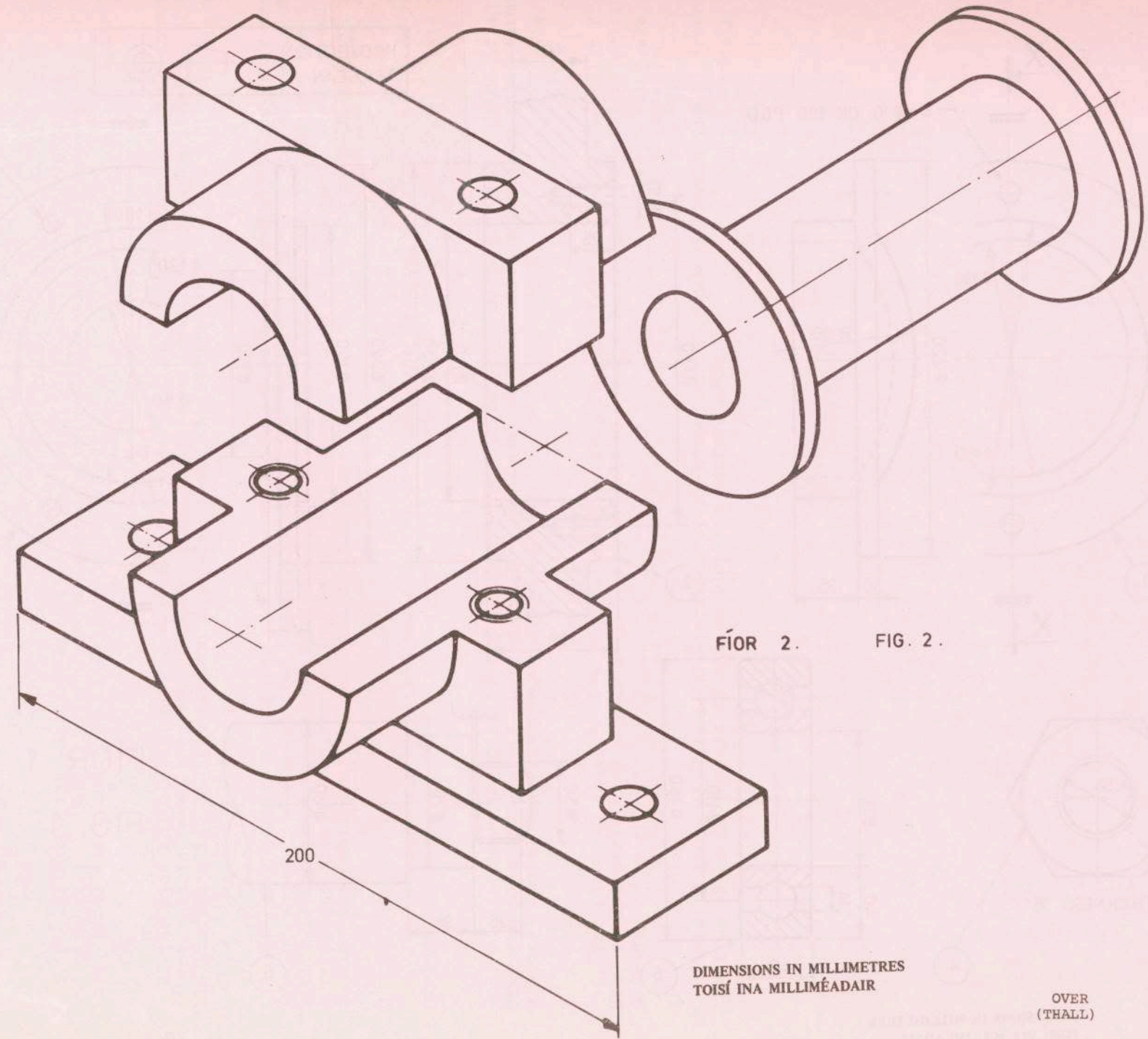
FÍOR 1.  
FIG. 1.

DIMENSIONS IN MILLIMETRES  
TOISÍ INA MILLIMÉADAIR

OVER  
(THALL)



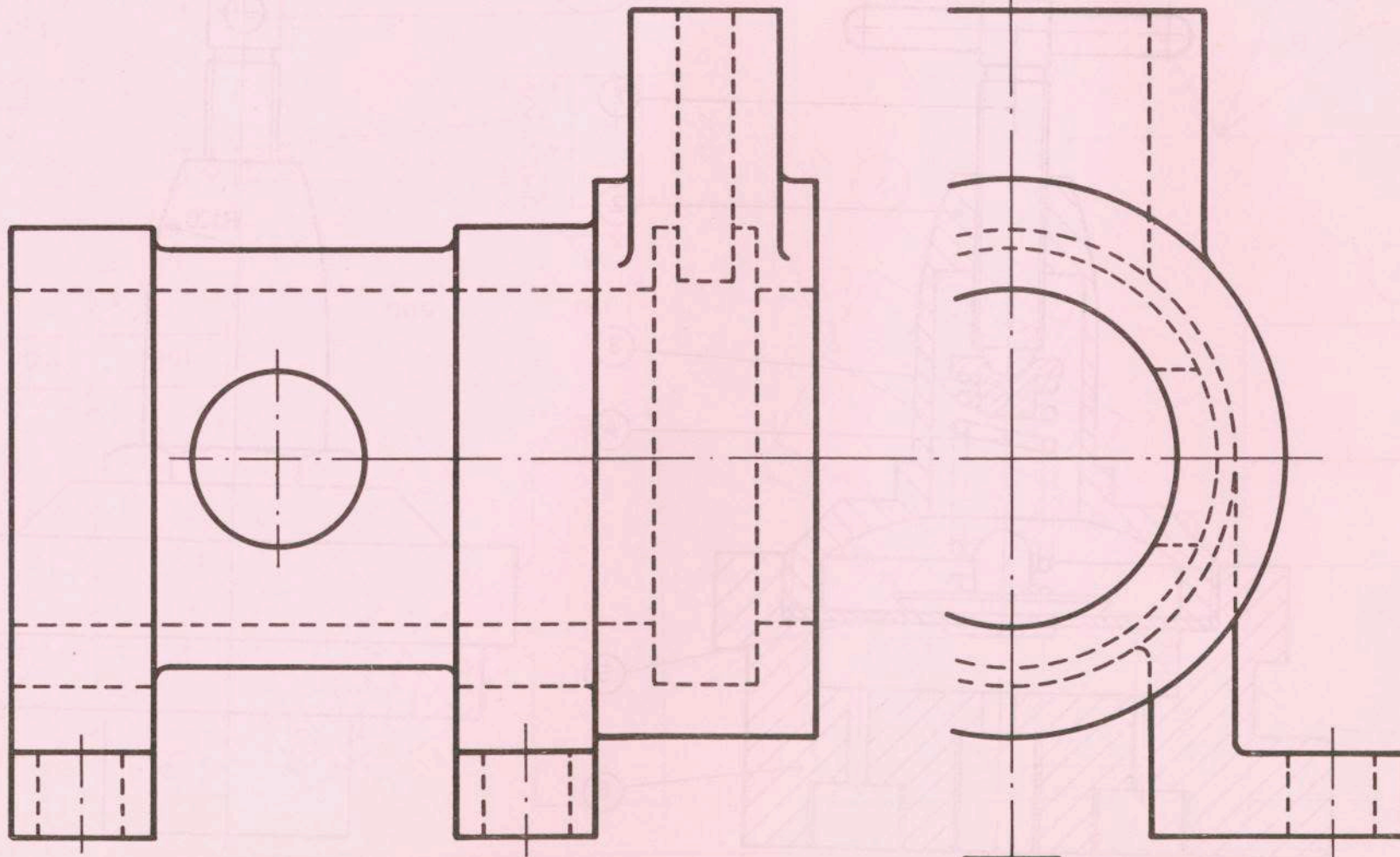
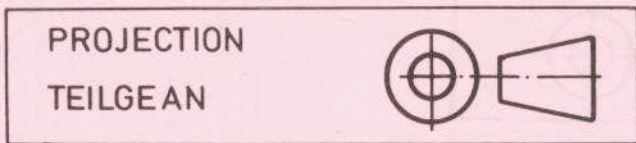
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TECHNICAL DRAWING PART II (a) ENGINEERING



FÍOR 2. FIG. 2.

DIMENSIONS IN MILLIMETRES  
TOISÍ INA MILLIMÉADAIR

OVER  
(THALL)



FÍOR 3.

FIG. 3.

OVER  
(THALL)



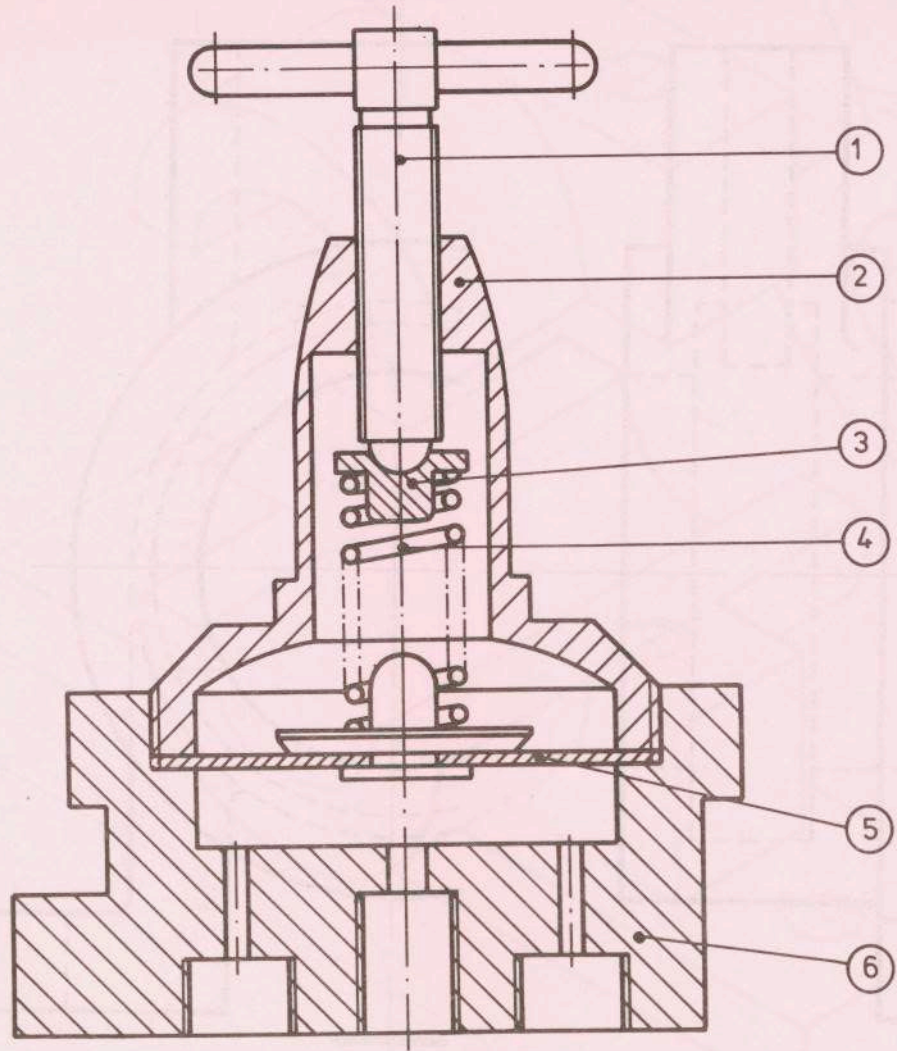
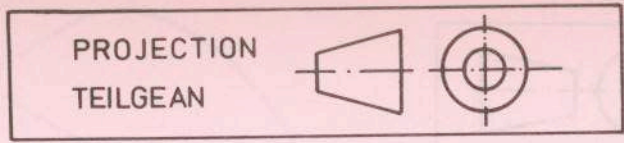
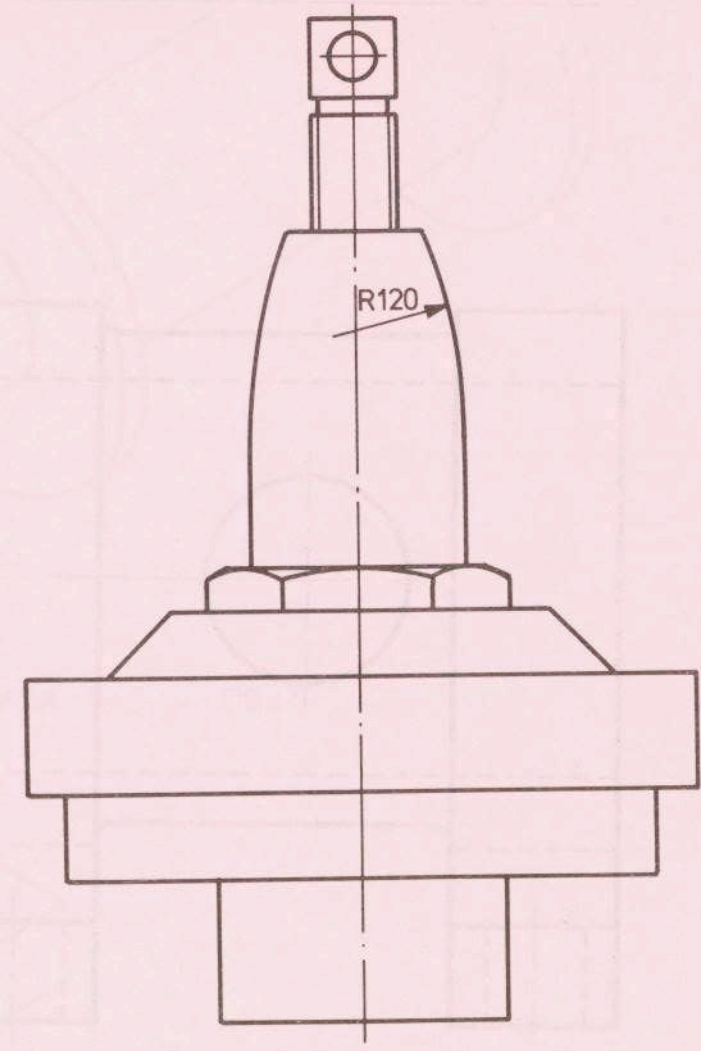
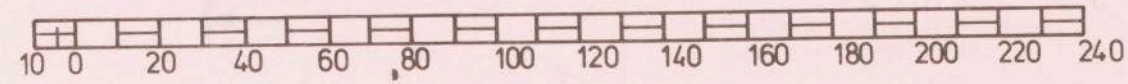


FIG. 4.



FÍOR 4.



OVER  
(THALL)



M.118(L5)

