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LEAVING CERTIFICATE EXAMINATION, 1982

TECHNICAL DRAWING - COMMON LEVEL - PAPER II

FRIDAY, 25 JUNE, MORNING, 9.30 - 12.00

N.B. ANSWER EITHER SECTION A OR SECTION B

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.
(g) All dimensions are in millimetres.

1. Details of an hydraulic pump assembly are given in Fig. 1, with the parts list tabulated below:-

Index	Part	Required
1	Body	1
2	Crank Shaft	1
3	Connecting Rod	1
4	Piston	1
5	Pin	1
6	Valve Spring	1
7	Valve	1
8	Nozzle	1

Make the following drawings of the assembled parts in first or third angle projection:-

(i) A sectional elevation as indicated by plane A-A.

(ii) An end elevation viewed in the direction of arrow X.

The solution should include the title HYDRAULIC PUMP, the ISO symbol for the type of projection used and four leading dimensions.

(110 marks)

2. An exploded view of a clamping device is shown in Fig. 2.
Sketch free hand, on the plain drawing paper supplied, the following views of the assembled parts.

(i) A sectional elevation, on the centre line, viewed in the direction of arrow S.

(ii) A plan view projected from (i).

The sketch should be in good proportion to the dimension given and should include a projection symbol and the title, CLAMPING DEVICE.

(40 marks)

3. (a) Two views of a machine part are shown in Fig. 3. Using the tracing paper supplied, trace in ink, directly from Fig. 3, a sectional elevation of the machine part. The section should be taken at the cutting plane B-B as viewed in the direction of the arrows.

OR

(b) An assembly drawing of a screw jack is shown in Fig. 4. Make a full size, fully dimensioned working drawing of Part A; dimensions should be taken from the scale shown in Fig. 4.
The drawing should be in orthographic projection and should include all necessary information.

(50 marks)

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.

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1. Fig. 1 shows the elevation and plan of a shelter. Draw a perspective view of the shelter when the station point (spectator) is as shown, the picture plane 7000 from the station point and the horizon line 1300 above the ground.

Scale 1 : 50.

2. The elevation and plan of a buttress to a wall are shown in Fig. 2. Surfaces A and C are inclined at 75° to the horizontal plane and surfaces B and D are inclined at 30° to the horizontal plane.

(a) Draw the plan and elevation of the buttress.

(b) Show the true shapes of the surfaces D and E.

Scale 1 : 50.

3. The elevation, plan and end view of a small spectators' stand are shown in Fig. 3. Draw the given views and show the shadows cast in plan and elevation when the direction of the light is as shown.

Scale 1 : 50.

4. Fig. 4 shows the elevation and sectional plan of a window ope. The head of the window is pointed parabolic. The sill is splayed at 30° to the horizontal plane.

(a) Draw the given views and project the vertical section C-C of the window ope.

(b) Draw the true shape of the splayed lining A.

Scale 1 : 20.

5. The elevation and end view of a bracket fixed between the ceiling and wall of a room are shown in Fig. 5. Draw an isometric view of the bracket when it is viewed from the front and looking upwards.

Scale 1 : 2.

6. Fig. 6 shows the plan of a moulding fixed to a wall. Piece A is horizontal and has a cross-section as shown. Pieces B and C are inclined upwards at 30° and the mouldings intersect on a vertical mitre plane.
Determine the cross-sections of the pieces B and C.

Scale 1 : 1.

7. Fig. 7 shows the outline plan of a roof for a house. All the roof surfaces have the same pitch.

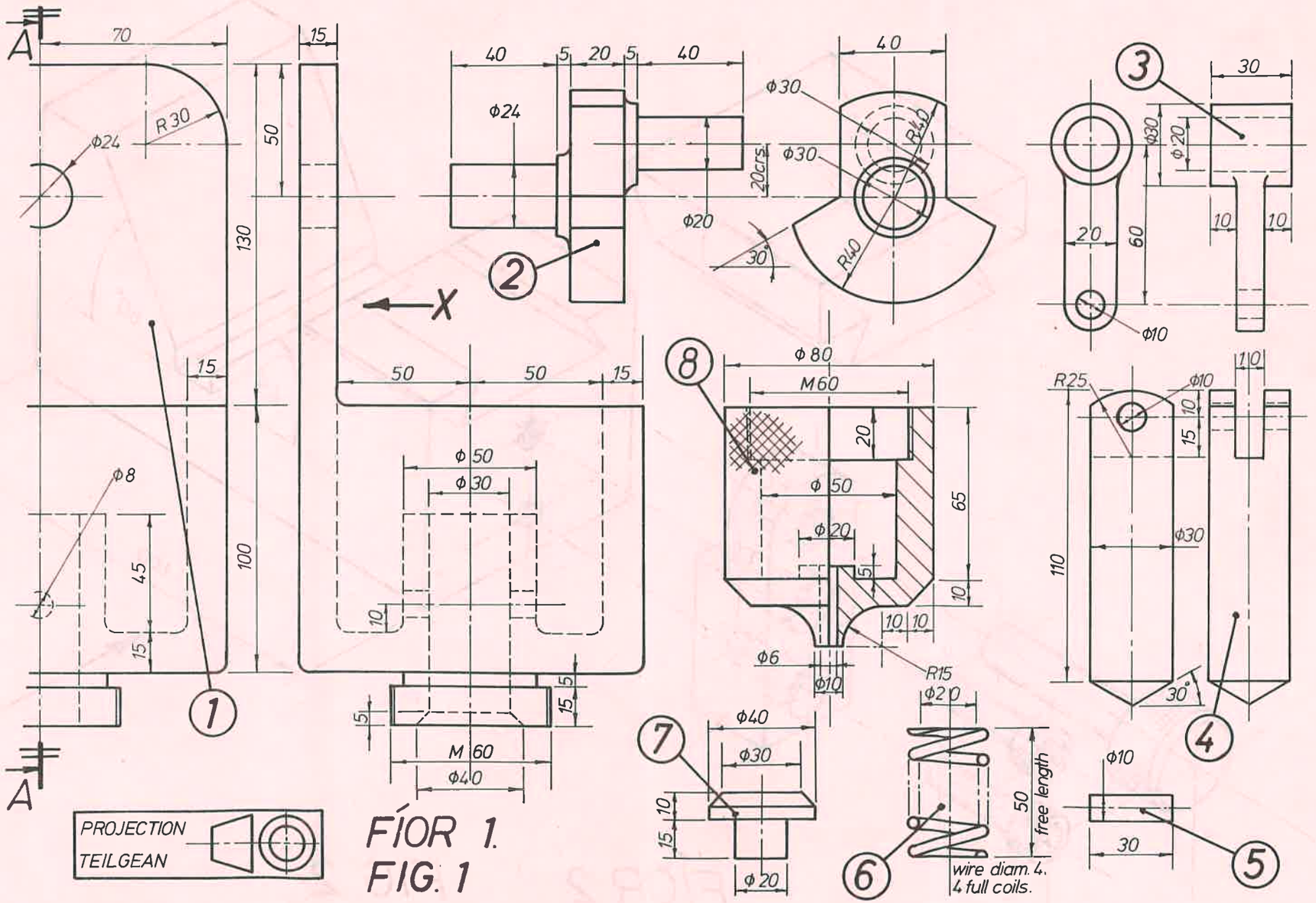
(a) Draw the plan and project the elevation.

(b) Develop the surfaces B, C and D.

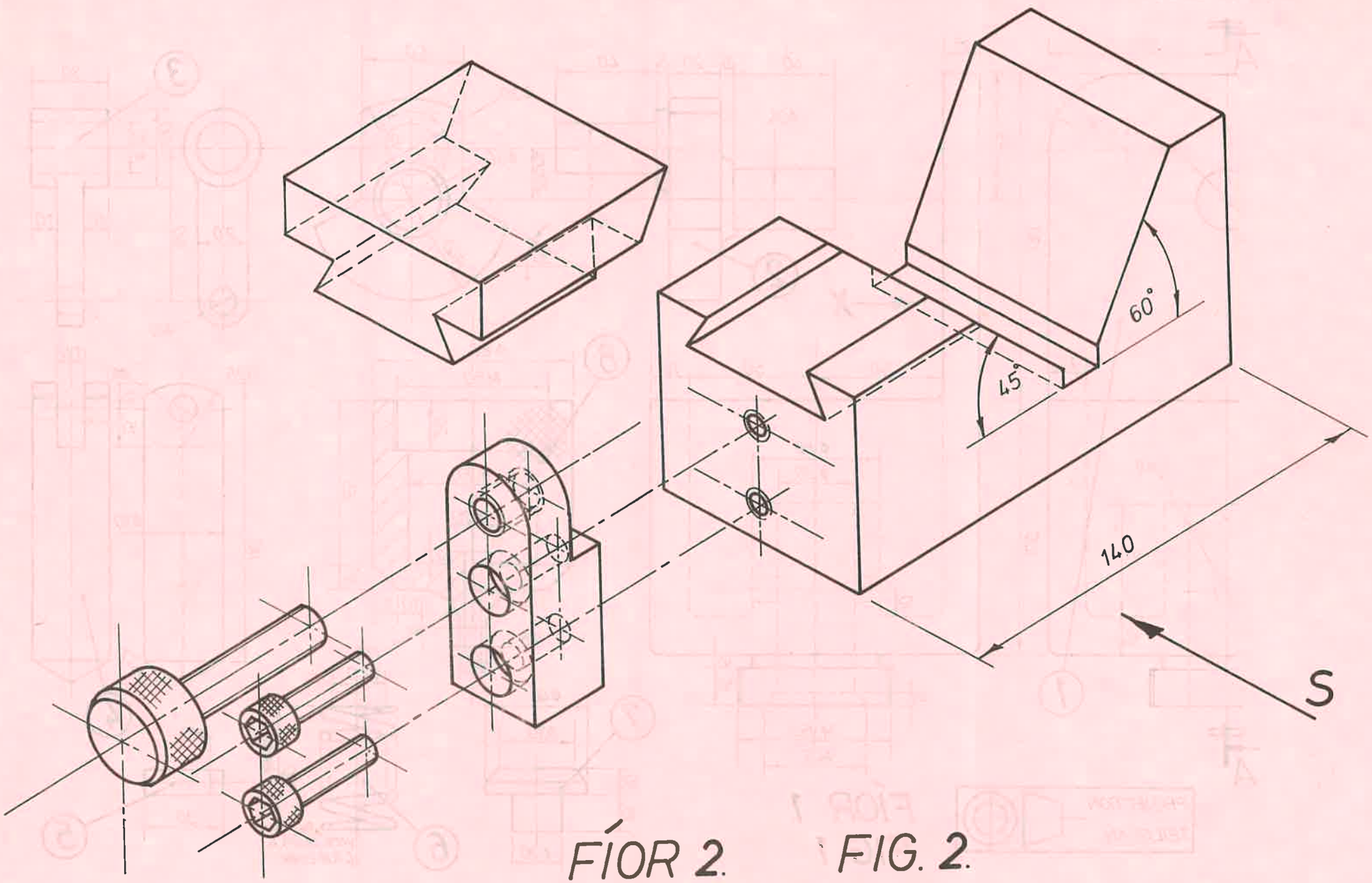
(c) Determine the dihedral angle between the surfaces A and B.

Scale 1 : 100.

1337



FÍOR 1.
FIG. 1



FÍOR 2. FIG. 2.

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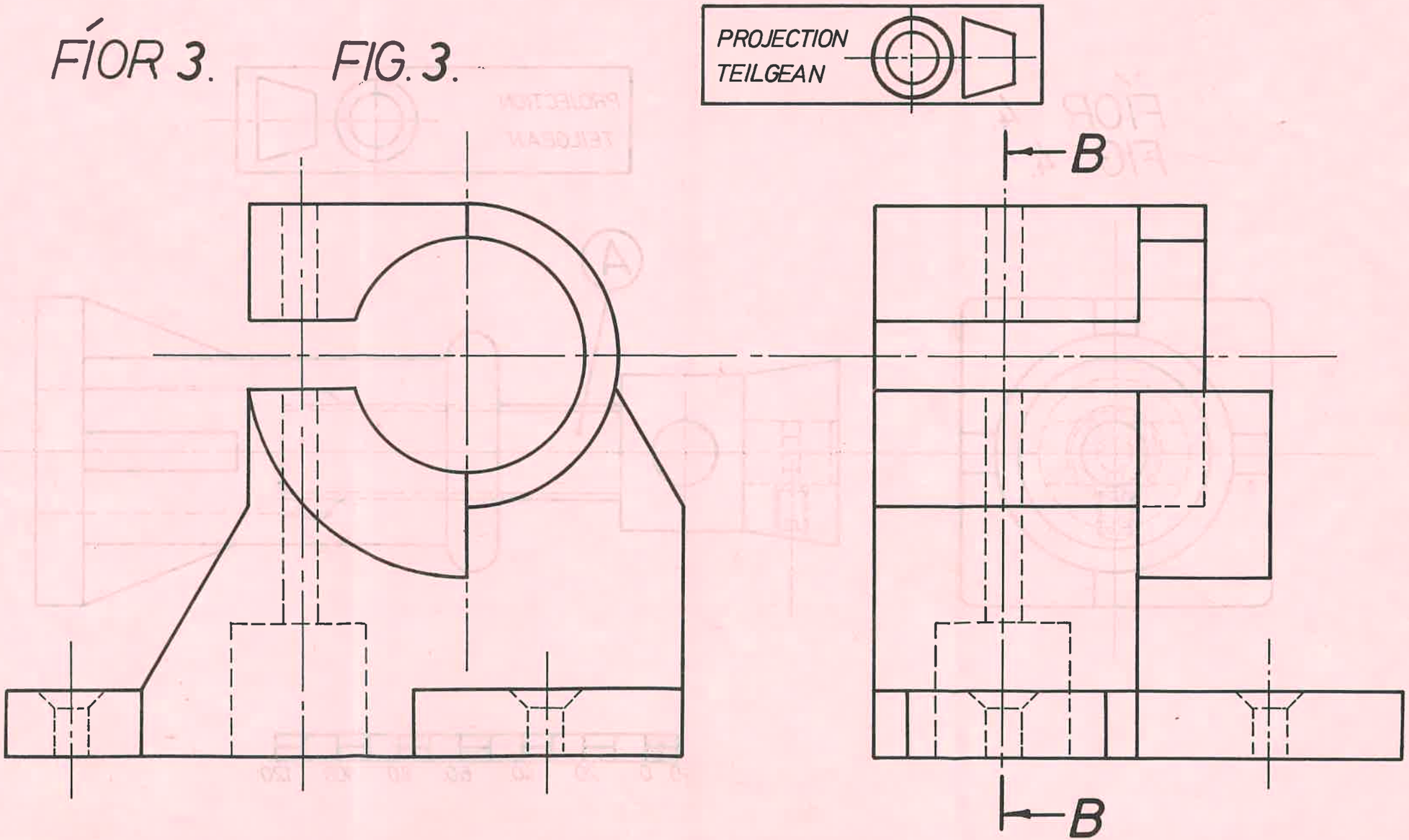
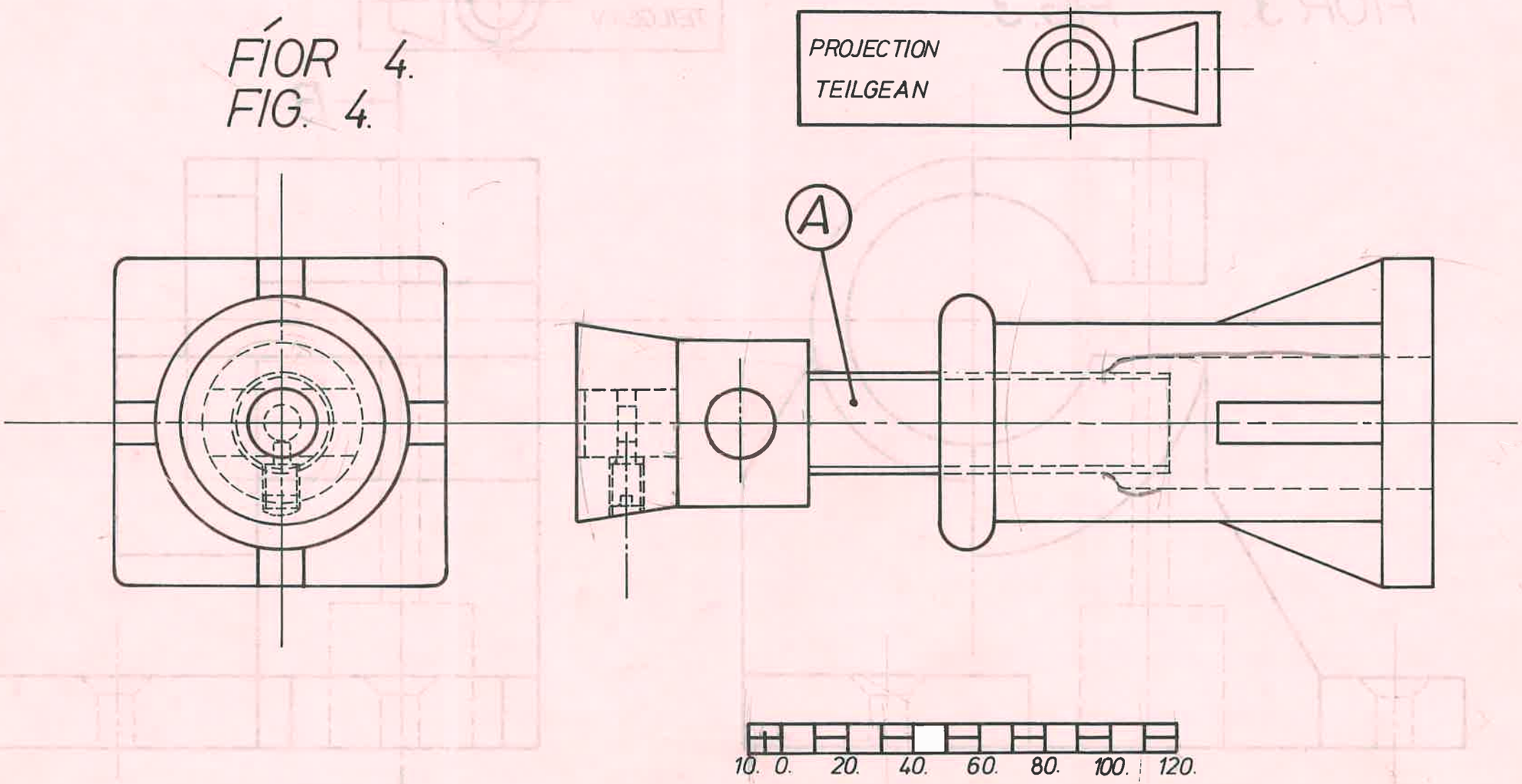
FÍOR 3. FIG. 3.



FÍOR 4.
FIG. 4.