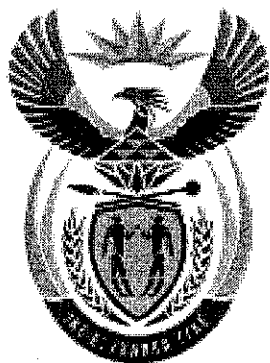


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higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T1180(E)(J24)T
AUGUST EXAMINATION

**NATIONAL CERTIFICATE: MULTI-DISCIPLINARY
DRAWING OFFICE PROCEDURE**

PICTORIAL DRAUGHTING

(8090214)

**24 July 2015 (Y-Paper)
13:00–17:00**

CLOSED-BOOK EXAMINATION

REQUIREMENTS: ONE sheet of A4 draughting film or gateway tracing paper and ONE sheet of A2 drawing paper

This question paper consists of 4 pages, 1 formula sheet and 4 diagram sheets.

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA
NATIONAL CERTIFICATE: MULTI-DISCIPLINARY DRAWING OFFICE
PROCEDURE
PICTORIAL DRAUGHTING
TIME: 4 HOURS
MARKS: 100

1. Answer ALL the questions.
 2. Read ALL the questions carefully.
 3. Number the answers according to the numbering system used in this question paper.
 4. Use BOTH sides of the DRAWING PAPER and answer QUESTIONS 1, 2 and 3 on the FRONT of the A2 DRAWING PAPER, QUESTIONS 4 and 5 on the REVERSE of the A2 DRAWING PAPER and QUESTION 6 on the DRAUGHTING FILM supplied.
 5. A 15 mm border must be drawn around the DRAWING PAPER on both sides.
 6. All drawing work including candidate information must be completed in pencil on the A2 DRAWING PAPER and in draughting ink on the A4 DRAUGHTING FILM.
 7. All drawing work must comply with the SABS 0111-1990 Code of Practice.
 8. Use your own discretion for dimensions not given.
 9. Use a 3 mm fillet radius for all radii not given.
 10. A balanced layout is very important and candidates will be penalised for poor planning.
 11. On completion the A2 DRAWING PAPER must be folded to A3 size with the EXAMINATION NUMBER visible on the front. The DRAUGHTING FILM must be placed inside the folded A2 DRAWING PAPER. No staples are to be used.
 12. Work neatly.
-

QUESTION 4: SQUARE-THREAD CONSTRUCTION

FIGURE 4 (DIAGRAM SHEET 4, attached) shows a view of a machined part that has a right-hand square screw thread machined on the end.

Do not copy the complete part but draw only TWO complete turns of the right-hand square screw thread machined on part A to show the true helical curves of the screw thread. The drawing must be placed vertically. Show ALL construction lines on the drawing. Do NOT show any hidden detail or calculations.

SCALE 3 : 1

[14]

QUESTION 5: GEAR TEETH CONSTRUCTION

The following data are given for a gear meshing with a pinion:

	GEAR	PINION
PCD	126 mm	105 mm
No. of teeth	18	15

Use an approximate method and draw a view where TWO teeth of the gear teeth mesh with TWO teeth of the pinion. Place the drawing in a horizontal position.

(10)

Show ALL construction lines and calculations on the drawing.

(4)

SCALE 1 : 1

[14]

QUESTION 6: INK DRAWING

FIGURE 5 (DIAGRAM SHEET 5, attached) shows a sectional view of a relief valve body.

Use ink pens and draw the given view of the relief valve body. Print or stencil a suitable title and scale centrally beneath the layout/drawing and insert any FOUR dimensions. Do NOT show any hidden detail.

SCALE 1 : 1

[18]

TOTAL: 100

PICTORIAL DRAUGHTING N4**FORMULA SHEET****1. SCREW-THREAD CONSTRUCTION**

Length = (pitch x number of turns) + pitch/2

Pitch divisions = pitch/12

2. GEAR TEETH CONSTRUCTION

Module = addendum

Dedendum = 1,25 x module

PCD = module x number of teeth

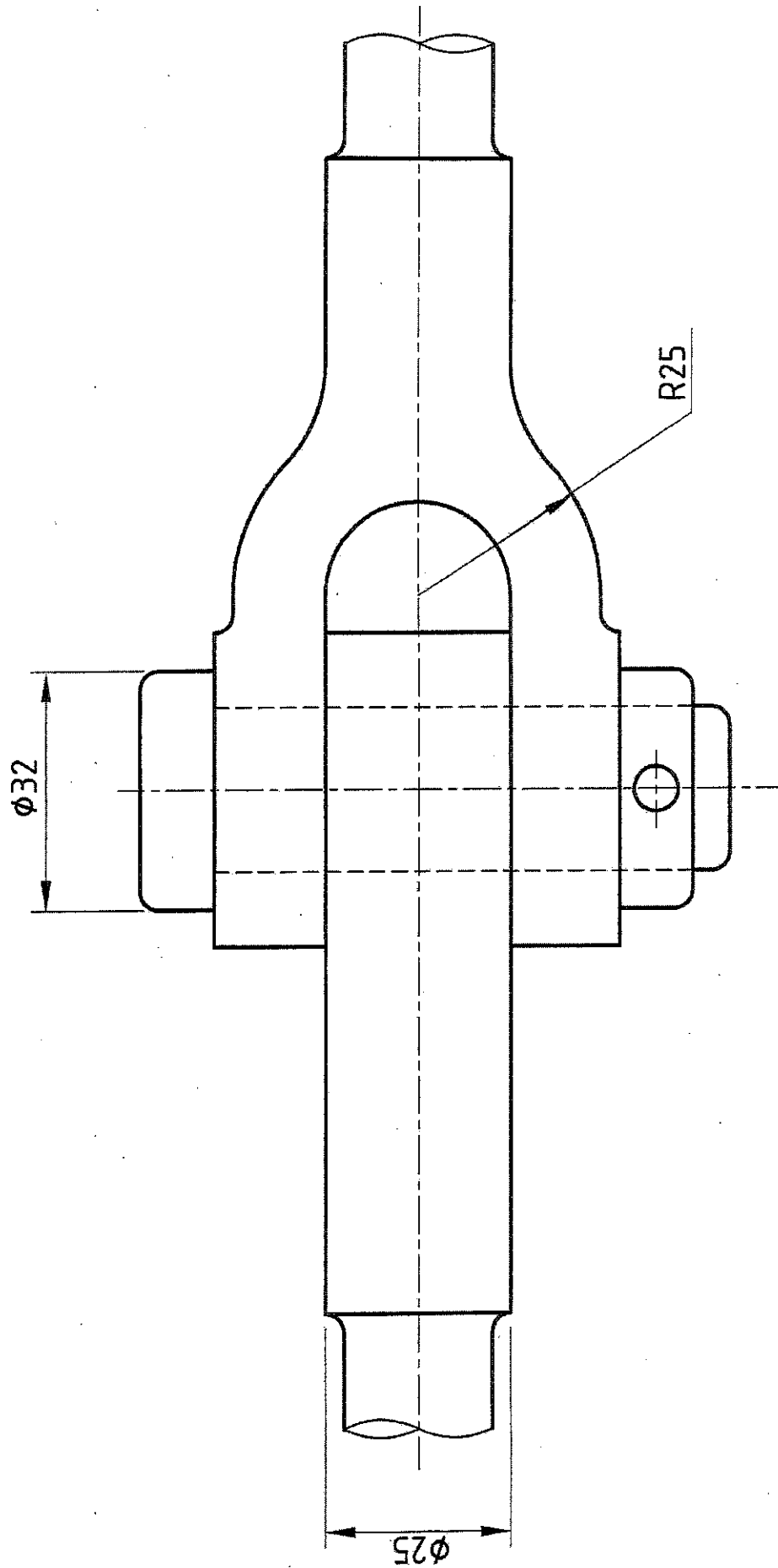
Fillet radius = 0,3 x module

Circular pitch = 3,142 x module

3. SQUARE SPRING CONSTRUCTION

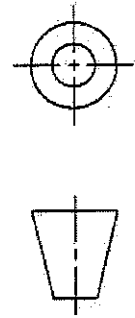
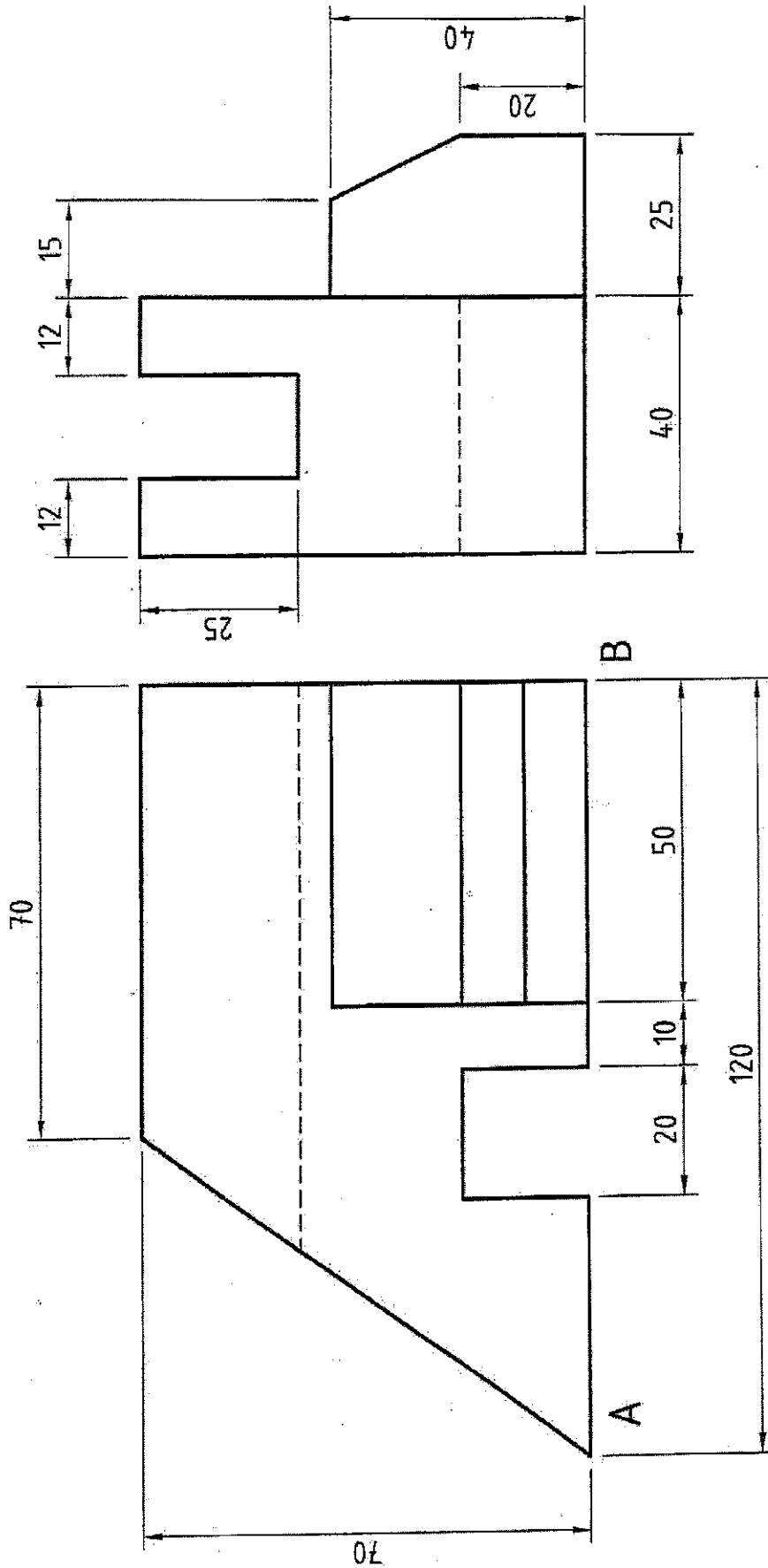
Length = (lead x number of turns) + material thickness

PICTORIAL DRAUGHTING N4 PRENTTEKENWERK
FIG.1 DIAGRAM SHEET/DIAGRAMVEL 1
FREEHAND DRAWING / VRYHANDTEKENE



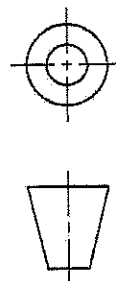
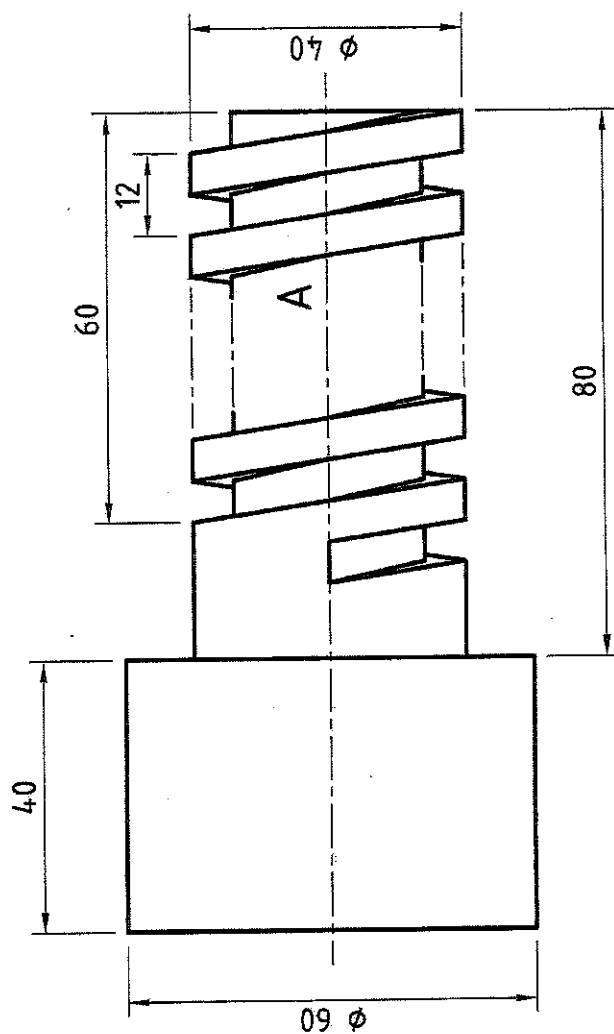
Q1 APRIL 2015

PICTORIAL DRAUGHTING N4. PRENTTEKENWERK
 FIG.2 DIAGRAM SHEET/DIAGRAMVEL 2
 TWO-POINT PERSPECTIVE/TWEEPUNTPERSPEKTIEWE TEKENE



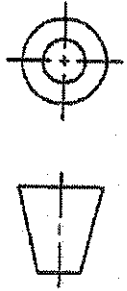
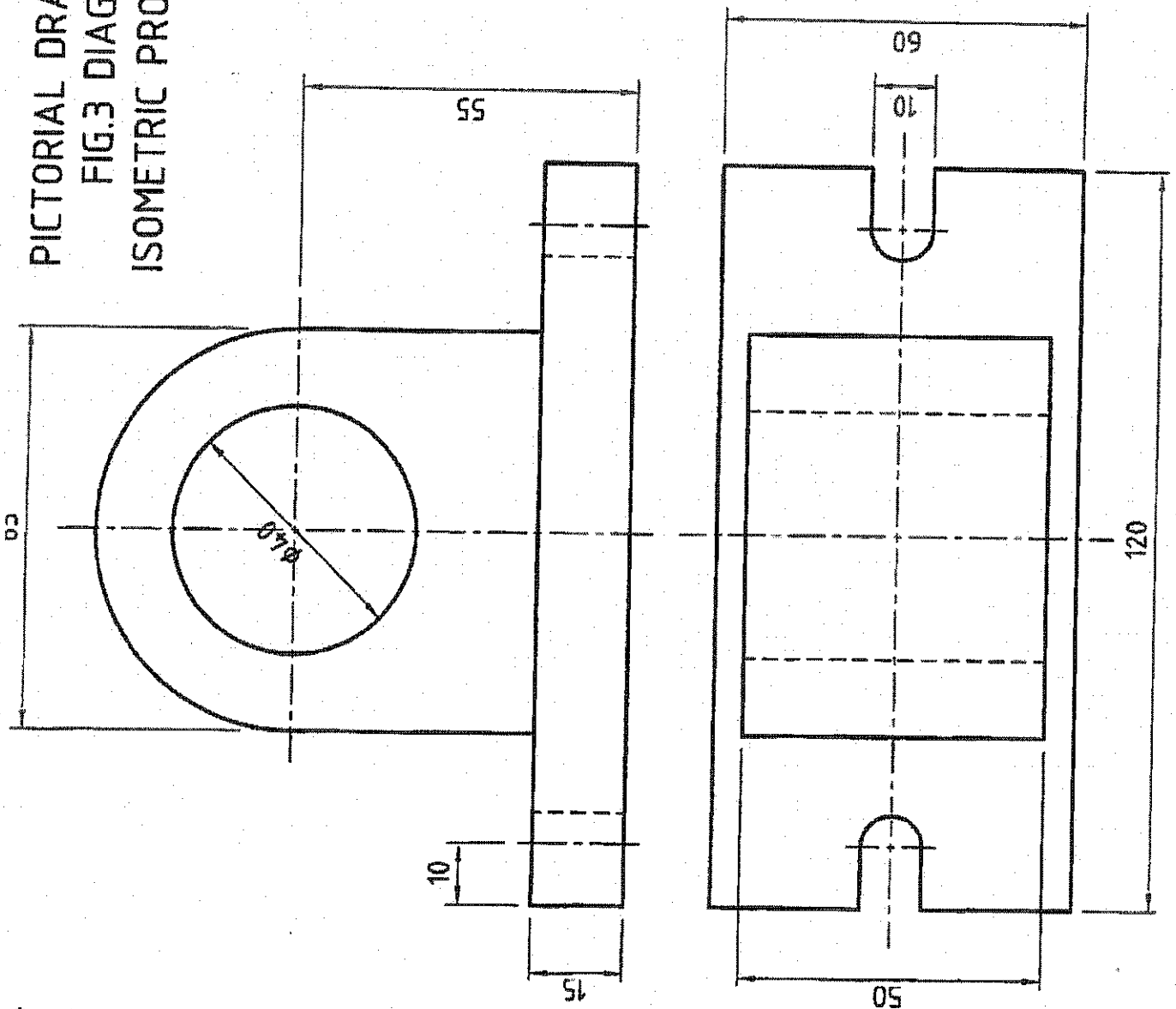
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PICTORIAL DRAUGHTING N4 PRENTTEKENWERK
 FIG.4 DIAGRAM SHEET/DIAGRAMVEL 4
 SQUARE SCREW THREAD/VIERKANTIGE SKROEF DRAAD

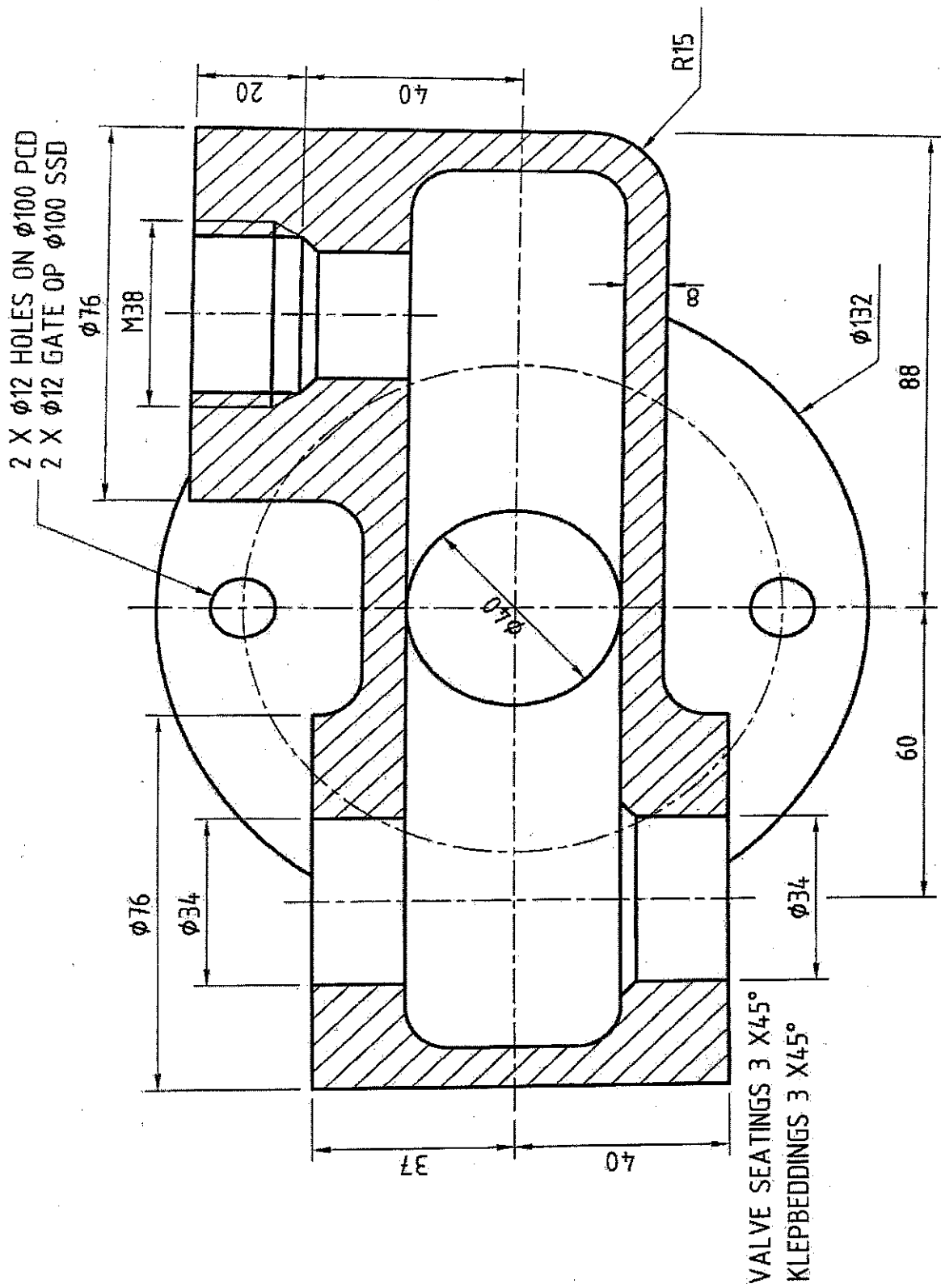


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PICTORIAL DRAUGHTING N4 PRENTTEKENWERK
FIG.3 DIAGRAM SHEET/DIAGRAMVEL 3
ISOMETRIC PROJECTION/ISOMETRIESEPROJEKSIE



PICTORIAL DRAUGHTING N4 PRENTTEKENWERK
 FIG.5 DIAGRAM SHEET/DIAGRAMVEL 5
 INK DRAWING/INKTEKENE



Q6 APR 2015