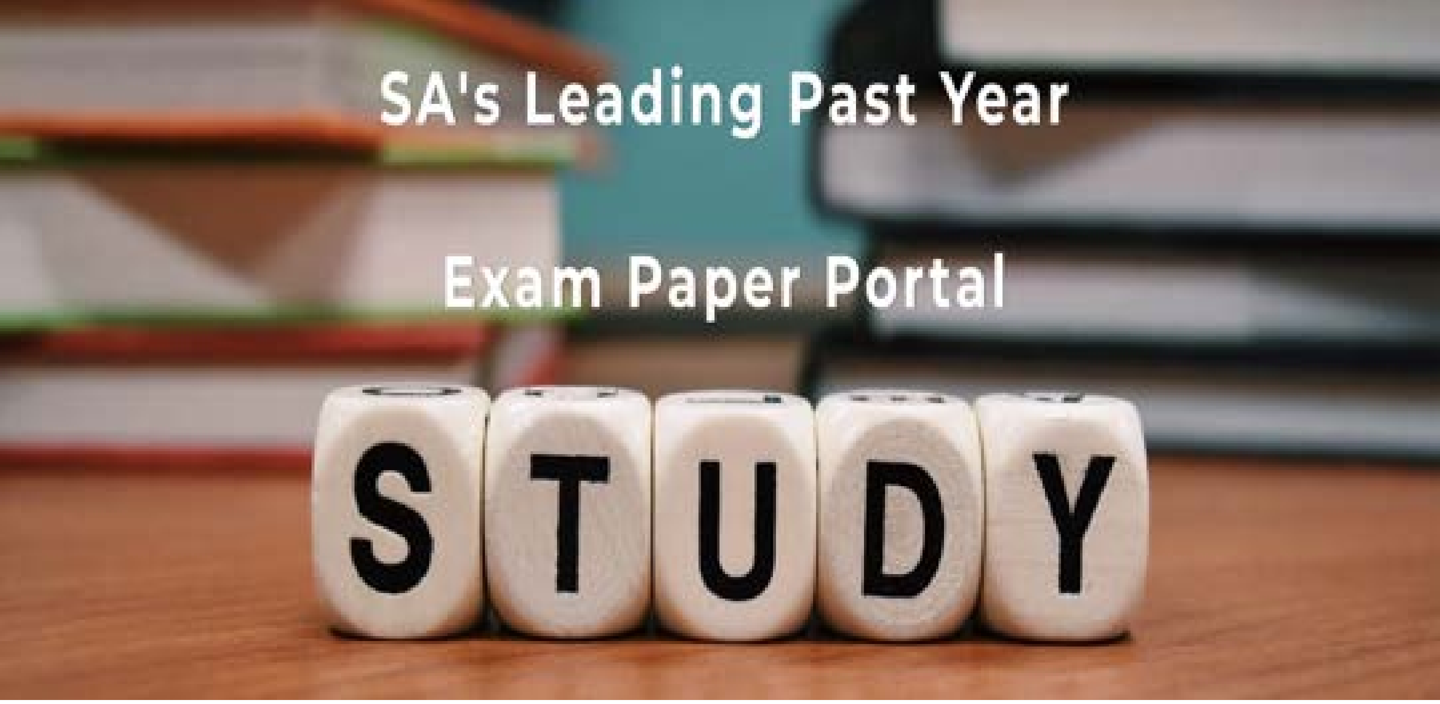


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**REPUBLIC OF SOUTH AFRICA**

**NASIONALE SENIOR SERTIFIKAAT**

**GRAAD 12**

**INGENIEURSGRAFIKA EN -ONTWERP V2**

**FEBRUARIE/MAART 2012**

**PUNTE: 100**

**TYD: 3 uur**

**Hierdie vraestel bestaan uit 6 bladsye.**

## INSTRUKSIES EN INLIGTING

1. Hierdie vraestel bestaan uit VIER vrae.
2. Beantwoord AL die vrae.
3. ALLE tekene is in derdehoekse ortografiese projeksie, tensy anders aangedui.
4. ALLE tekene moet voltooi word met instrumente, tensy anders aangedui.
5. ALLE antwoorde moet akkuraat en netjies geteken word.
6. AL die vrae moet, soos voorgeskryf, op die VRAESTEL beantwoord word.
7. AL die bladsye moet weer in nommervolgorde vasgekram word, ongeag of die vraag beantwoord is.
8. Tydsbeplanning is noodsaaklik om al die vrae te voltooi.
9. Drukskryf jou eksamennommer in die blokkie voorsien op elke bladsy.
10. Enige besonderhede of afmetings wat nie gegee is nie, moet in goeie verhouding veronderstel word.

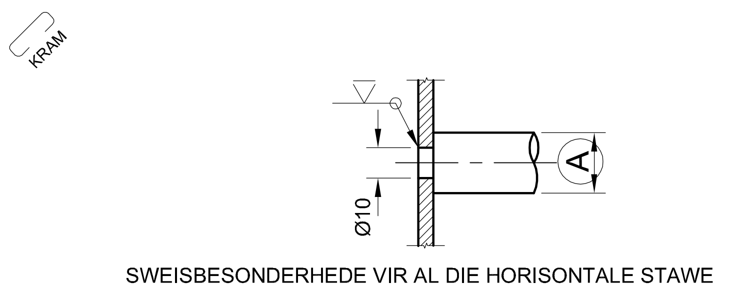
**SLEGS VIR AMPTELIKE GEBRUIK**

| VRAAG | PUNTE BEHAAL | | | ½ | TEKEN | GEMODEREER | | | ½ | TEKEN | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| TOTAAL | | | | | | | | | | | |
| | 2 | 0 | 0 | | | 2 | 0 | 0 | | | |

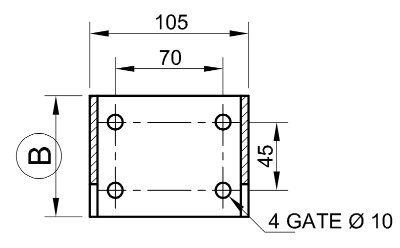
| FINALE VERWERKTE PUNT | NAGESIEN DEUR |
|---|---|
| 100 | |

| VOLTOOI DIE VOLGENDE: |
|---|
| SENTRUMNOMMER |
| |
| SENTRUMNOMMER |
| EKSAMENNOMMER |
| |
| EKSAMENNOMMER |

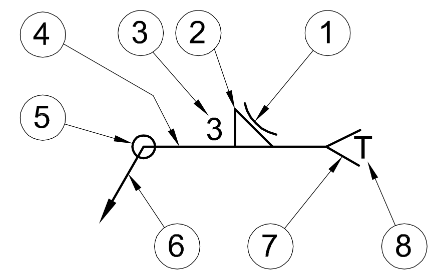
Kopiereg voorbehou




DETAIL 'R'




AANSIG 1

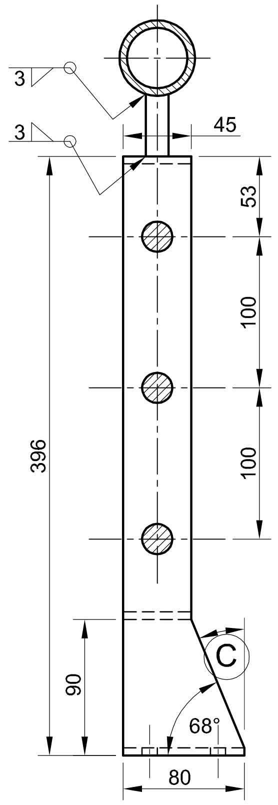



SWEISSIMBOOL

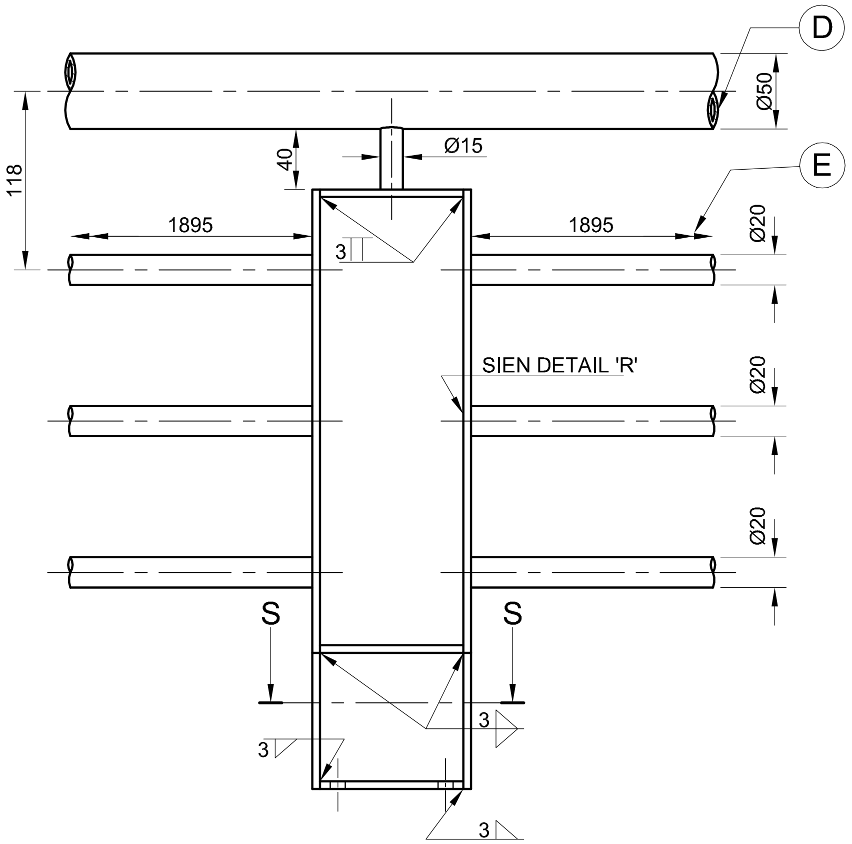
**VRAAG 1: ANALITIES (MEGANIES)**

**Gegee:**
'n Seleksie van aansigte van 'n balustrade-steunstuk, 'n sweissimbool, 'n titelblok en 'n tabel met vrae. Die tekene is nie volgens die aangetoonde skaal voorberei nie.

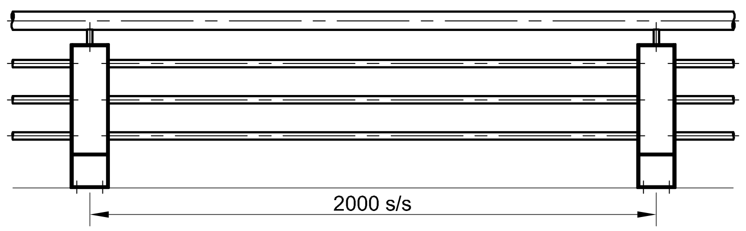
**Instruksies:**
Voltooi die tabel hieronder deur die vrae, wat almal na die bygaande tekene en titelblok verwys, netjies te beantwoord. **[30]**




AANSIG 3




AANSIG 2




INSTALLASIEDIAGRAM

| | VRAE | ANTWOORDE | | |
|---|---|---|---|---|
| 1 | Met verwysing na die sweissimbool, verbind die nommer op die tekening met die korrekte element in die kolom regs van hierdie vraag. | PYLPUNTLYN<br>STERT<br>VERWYSINGSLYN<br>SWEISPROSES<br>KONKAWE AFWERKING<br>SWEIS RONDOM<br>GROOTTE VAN SWEISLAS | 7 | |
| 2 | Wanneer is die tekening goedgekeur? | | 1 | |
| 3 | Wat is die vervaardigingsmaatskappy se web-adres? | | 1 | |
| 4 | Watter afwerking word vir die balustrade vereis? | | 1 | |
| 5 | Wat is die lêernaam? | | 1 | |
| 6 | Wat is die dikte van die plaat wat op die steunstuk gebruik word? | | 1 | |
| 7 | Hoeveel steunstukke moet vervaardig word? | | 1 | |
| 8 | Wat sal aansig 1 genoem word? | | 1 | |
| 9 | Wat sal aansig 3 genoem word? | | 1 | |
| 10 | Watter grootte bout word benodig om die steunstuk te bevestig? | | 1 | |
| 11 | Bepaal die afmetings: A B C | | 3 | |
| 12 | Wat is die senter-tot-senterafstand tussen twee steunstukke? | | 1 | |
| 13 | Hoeveel opppervlakke moet op elke steunstut gesweis word? | | 2 | |
| 14 | Wat word kenmerk D op aansig 2 genoem ? | | 1 | |
| 15 | Wat is die betekenis van die dubbelpyltjie by E? | | 1 | |
| 16 | Indien die toelaatbare toleransie van 'n afmeting ± 0,5 is, bepaal die boonste en onderste toleransie op 'n afmeting van 30 mm. | | 2 | |
| 17 | In die blok hieronder, teken, in netjiese vryhand, die simbool vir die projeksiesisteem wat gebruik word. | | 4 | |
| | **TOTAAL** | | **30** | |

| | | | |
|---|---|---|---|
| LÊERNAAM: PM 12-PSC-347 | MATERIAAL: 5 mm SAGTESTAALPLAAT | | |
| TEKENING NR. 7 | AFWERKING: CHROOMPLATEER | ALLE AFMETINGS IS IN MILLIMETER. | |
| BALUSTRADE VIR PIET EN SEUNS KONTRAKTEURS WALDOSTRAAT 17 DURBAN | TEKENPROGRAM: AUTOCAD 2008 | TEKENAAR: HAROLD | 2011/05/15 |
| | ALLE ONGESPESIFISEERDE RADIUSSE IS R3. | NASIENER: SALLY | 2011/05/25 |
| WELDTECH INGENIEURSWERKE | PARKLAAN 51 NEWLANDS 4070 www.weldtech.co.za ☏ 031 645 7820 | GOEDGEKEUR: GEORGE | 2011/06/01 |
| | | SKAAL: 1 : 10 | |
| | | HOEVEELHEID: 26 STEUNSTUKKE | |
| TITLE BALUSTRADE-STEUNSTUK | | | |

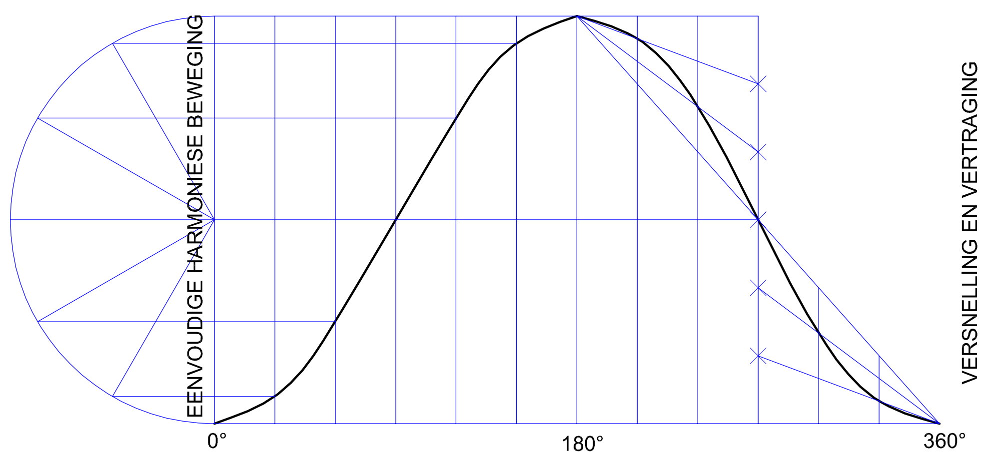
ANTWOORD 17

SIMBOOL

| EKSAMENNOMMER |
|---|
| |
| EKSAMENNOMMER |



Kopiereg voorbehou



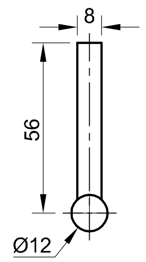

VERPLASINGSGRAFIEK
SKAAL 8 mm = 30°

**VRAAG 2: LOKUSSE**
**NOTA:** Beantwoord VRAAG 2.1 EN 2.2.

**2.1 NOK**
**Gegee:**
- Die besonderhede van 'n rollervormige volger en 'n verplasingsgrafiek wat eenvoudige harmoniese beweging en eenvormige versnelling en vertraging toon
- Die vertikale senterlyn van die nokprofiel

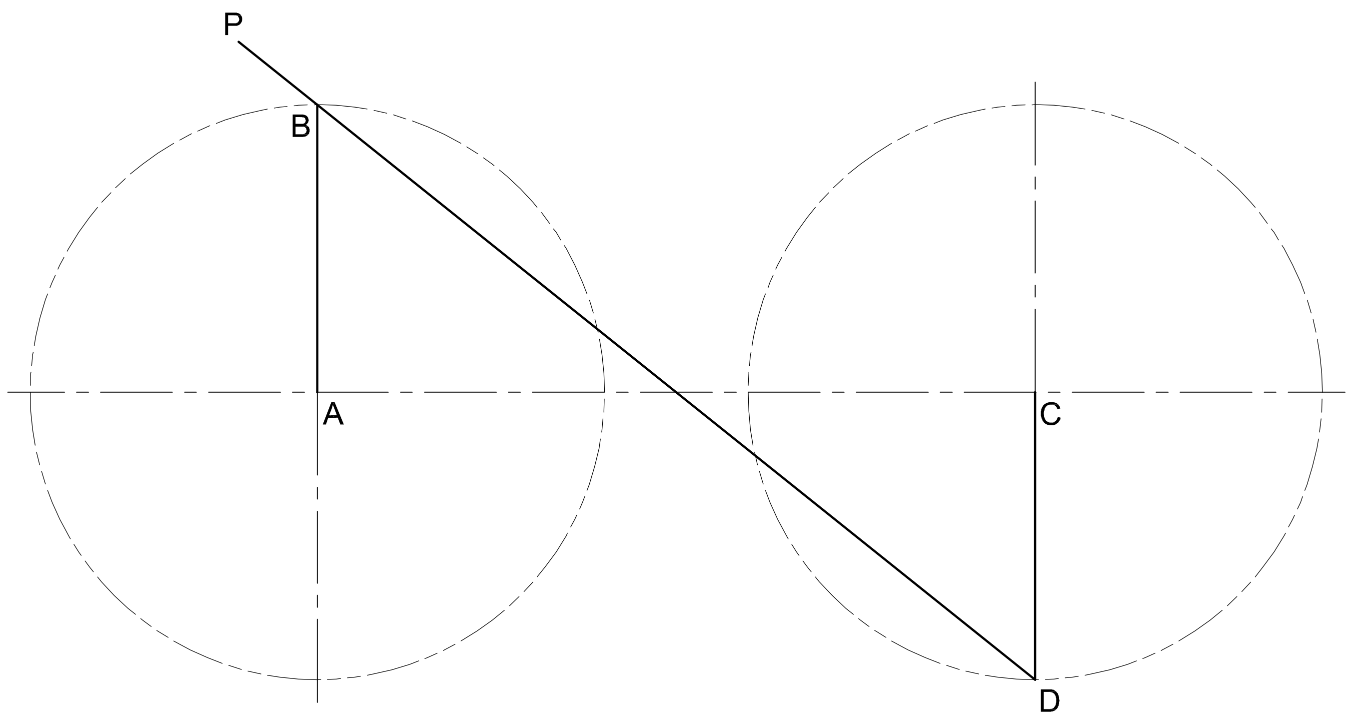
**Spesifikasies:**
- Nokas = Ø14 mm
- Minimum afstand vanaf die nokprofiel na die senter van die nokas = 10 mm
- Rotasie = kloksgewys

**Instruksies:**
- Teken, volgens skaal 1 : 1, die gegewe volger-besonderhede sodat dit heen en weer op die gegewe senterlyn sal beweeg.
- Vanaf die gegewe verplasingsgrafiek, projekteer en teken die nokprofiel.
- Toon die senterlyn en die rigting van rotasie op die nokprofiel.
- Toon AL die nodige konstruksies. **[19]**




VOLGERBESONDERHEDE

| ASSESSERINGSKRITERIA | | | | |
|---|---|---|---|---|
| 1. VOLGER + MIN. AFSTAND + SENTERLYN + NOKAS | 6 | | | |
| 2. KONSTRUKSIE | 3 | | | |
| 3. UITSTIPPING + RIGTING | 6 | | | |
| 4. KURWE | 4 | | | |
| **SUBTOTAAL** | **19** | | | |




**2.2 MEGANISME**
**Gegee:**
'n Skematiese diagram van 'n verbinde krukmeganisme wat bestaan uit twee krukke, AB en CD, wat met 'n stang, DP, wat by D geheg is en deur B gly, verbind is.

**Beweging:**
Soos wat kruk AB in 'n antikloksgewyse rigting roteer, roteer kruk CD in 'n kloksgewyse rigting teen dieselfde snelheid.

**Instruksies:**
- Deur die gegewe diagram te gebruik, bepaal die lokus wat deur punt P gegenereer word vir EEN volledige omwenteling van die meganisme.
- Toon AL die nodige konstruksies. **[19]**

| ASSESSERINGSKRITERIA | | | | |
|---|---|---|---|---|
| 1. KONSTRUKSIES | 5 | | | |
| 2. LOKUS VAN P | 14 | | | |
| **SUBTOTAAL** | **19** | | | |
| **TOTAAL** | **38** | | | |
| EKSAMENNOMMER | | | | |
| | | | | |
| EKSAMENNOMMER | | | | 3 |

Kopiereg voorbehou 

KRAM

**VRAAG 3: ISOMETRIESE TEKENING**

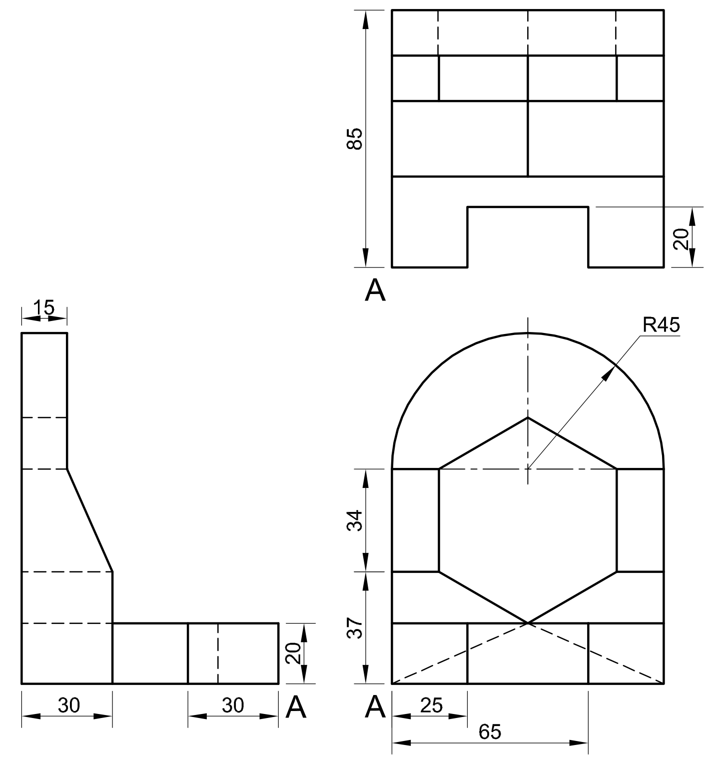
**Gegee:**

- Die vooraansig, boaansig en linkeraansig van 'n setmaat met 'n reëlmatige seshoekige gat
- Die posisie van punt A op die tekenvel

**Instruksies:**

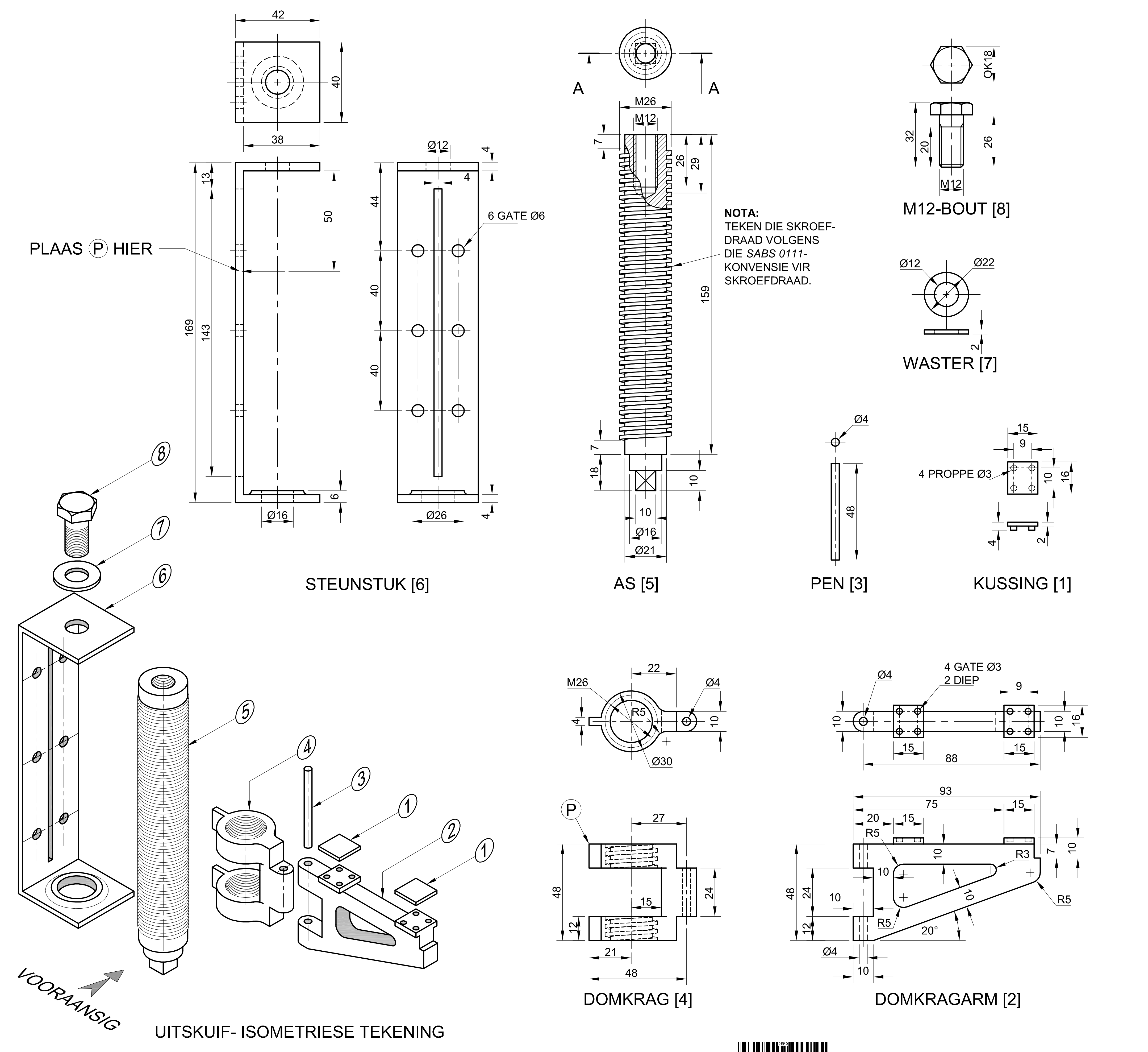
Deur skaal 1 : 1 te gebruik, omskep die ortografiese aansigte van die setmaat in 'n isometriese tekening.

- Maak A die laagste punt van die tekening.
- Toon ALLE nodige konstruksies.
- GEEN stensils mag gebruik word nie.
- GEEN verborge besonderhede word verlang nie. **[39]**




A

| ASSESSERINGSKRITERIA | | | | |
|---|---|---|---|---|
| 1. HULPAANSIG + PLASING + SIRKEL-KONSTRUKSIE | 5 | | | |
| 2. ISO'-SIRKELS + SENTERLYNE | 5 | | | |
| 3. ISO + NIE-ISO'-LYNE | 18 | | | |
| 4. SESKANT | 11 | | | |
| **TOTAAL** | **39** | | | |
| EKSAMENNOMMER | | | | |
| | | | | |
| EKSAMENNOMMER | | | | 4 |




## VRAAG 4: MEGANIESE SAMESTELLING

**Gegee:**

- Die uitskuif- isometriese tekening van die onderdele van 'n domkragsamestelling, wat die posisie van elke onderdeel relatief tot al die ander toon
- Ortografiese aansigte van elke onderdeel van die domkragsamestelling

**Instruksies:**

- Beantwoord hierdie vraag op bladsy 6.
- Teken, volgens skaal 1 : 1 en in derdehoekse ortografiese projeksie, die volgende aansigte van die saamgestelde onderdele van die domkragsamestelling:
  - **4.1 'n Deursnee-vooraansig** volgens snyvlak A-A, soos gesien vanuit die rigting van die pyl wat in die uitskuif-isometriese tekening getoon word. Die snyvlak, wat deur die vertikale senterlyn van die samestelling gaan, word op die boaansig van die as (onderdeel 5) getoon.
  - **4.2 Die boaansig**
- ALLE tekene moet voldoen aan die riglyne vervat in die *SABS 0111.*

**LET WEL:**

- Soos aangedui, plaas punt P op die domkrag by punt P op die steunstuk.
- Toon DRIE vlakke van die M12-bout en ALLE nodige konstruksies.
- GEEN verborge besonderhede word verlang nie.

**Voeg die volgende kenmerke by die tekening:**

- Die snyvlak A-A
- Benoem die deursneeaansig SNIT A-A. **[93]**

| ONDERDELELYS | | |
|---|---|---|
| ONDERDEEL | HOEVEELHEID | MATERIAAL |
| 1. KUSSING | 2 | BRONS |
| 2. DOMKRAGARM | 1 | GIETYSTER |
| 3. PEN | 1 | SAGTE STAAL |
| 4. DOMKRAG | 1 | GIETYSTER |
| 5. AS | 1 | SAGTE STAAL |
| 6. STEUNSTUK | 1 | SAGTE STAAL |
| 7. WASTER | 1 | SAGTE STAAL |
| 8. M12-BOUT | 1 | SAGTE STAAL |

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www.mtech.co.za
☏ 053 645 7820

# DOMKRAGSAMESTELLING

ALLE AFMETINGS IS IN MILLIMETER.

ALLE ONGESPESIFISEERDE RADIUSSE IS R2.

5

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KRAM

| ASSESSERINGSKRITERIA | | | | | |
|---|---|---|---|---|---|
| **DEURSNEE-VOORAANSIG** | | | | | |
| 1 | KUSSING | 3 | | | |
| 2 | DOMKRAGARM | 11 | | | |
| 3 | PEN | 1 | | | |
| 4 | DOMKRAG | 7½ | | | |
| 5 | AS | 14½ | | | |
| 6 | STEUNSTUK | 7 | | | |
| 7 | WASTER | 1 | | | |
| 8 | M12-BOUT | 11 | | | |
| 9 | ARSERING | 13 | | | |
| **SUBTOTAAL** | | **69** | | | |
| **BOAANSIG** | | | | | |
| 1 | BUITELYN | 10 | | | |
| 2 | M12-BOUT + WASTER | 3 | | | |
| **SUBTOTAAL** | | **13** | | | |
| **ALGEMEEN** | | | | | |
| 1 | SENTERLYNE | 2 | | | |
| 2 | SNYVLAK + TITEL | 4 | | | |
| 3 | SAMESTELLING | 5 | | | |
| **SUBTOTAAL** | | **11** | | | |
| **TOTAAL** | | **93** | | | |
| EKSAMENNOMMER | | | | | |
| | | | | | |
| EKSAMENNOMMER | | | | | 6 |



Kopiereg voorbehou

basic education

Department:
Basic Education
**REPUBLIC OF SOUTH AFRICA**

# NATIONAL SENIOR CERTIFICATE

## GRADE 12

## ENGINEERING GRAPHICS AND DESIGN P2

**FEBRUARY/MARCH 2012**

**MARKS: 100**

**TIME: 3 hours**

**This question paper consists of 6 pages.**

## INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions.
2. Answer ALL the questions.
3. ALL drawings are in third-angle orthographic projection, unless otherwise stated.
4. ALL drawings must be completed using instruments, unless otherwise stated.
5. ALL answers must be drawn accurately and neatly.
6. ALL the questions must be answered on the QUESTION PAPER as instructed.
7. ALL the pages must be re-stapled in numerical sequence, irrespective of whether the question was attempted.
8. Time management is essential in order to complete all the questions.
9. Print your examination number in the block provided on every page.
10. Any details or dimensions not given must be assumed in good proportion.

**FOR OFFICIAL USE ONLY**

| QUESTION | MARKS OBTAINED | | | ½ | SIGN | MODERATED | | | ½ | SIGN | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| TOTAL | | | | | | | | | | | |
| | 2 | 0 | 0 | | | 2 | 0 | 0 | | | |

| FINAL CONVERTED MARK | CHECKED BY |
|---|---|
| 100 | |

| COMPLETE THE FOLLOWING: |
|---|
| CENTRE NUMBER |
| |
| CENTRE NUMBER |
| EXAMINATION NUMBER |
| |
| EXAMINATION NUMBER |

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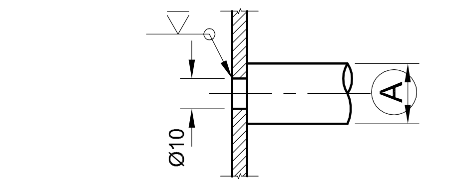
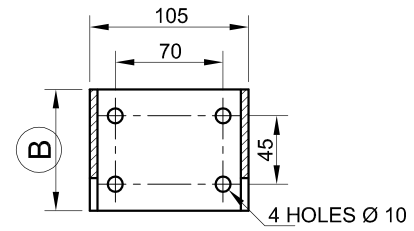
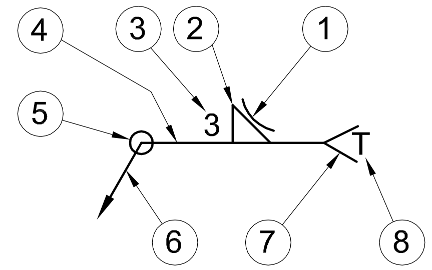



WELDING DETAIL FOR ALL THE HORIZONTAL BARS

DETAIL 'R'




VIEW 1

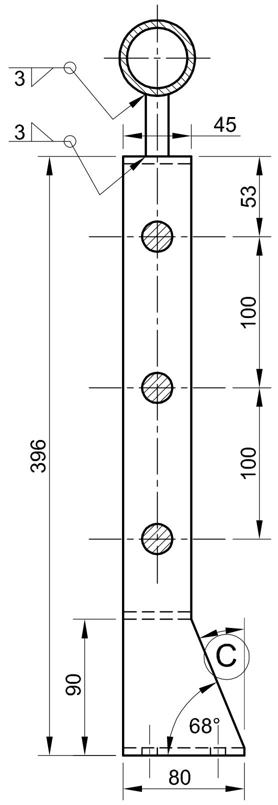



WELDING SYMBOL

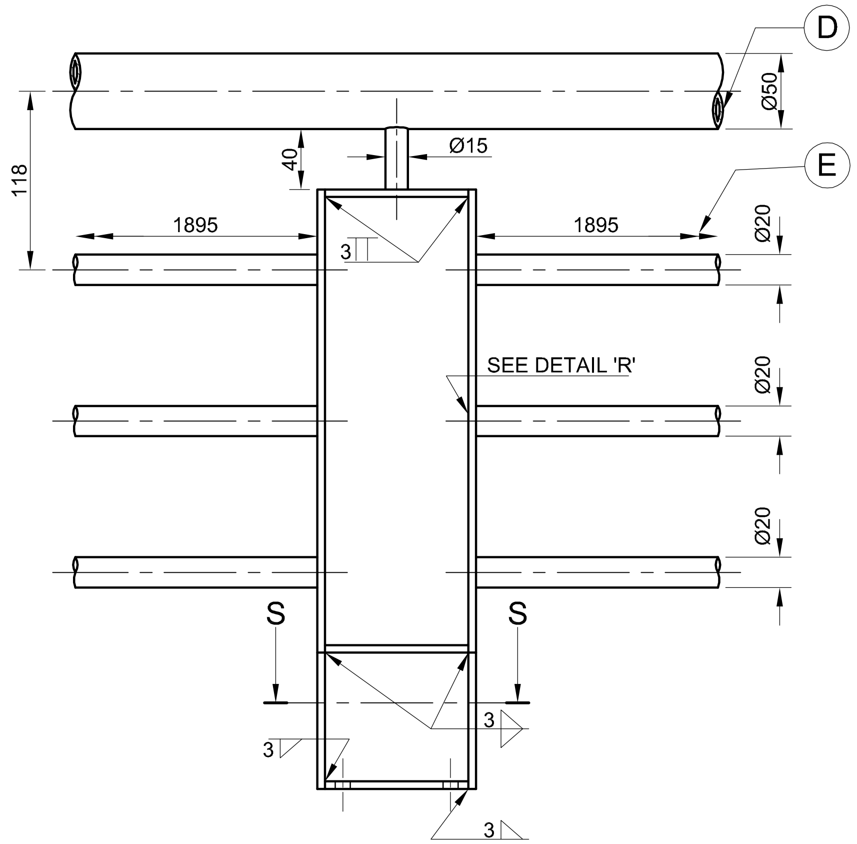
## QUESTION 1: ANALYTICAL (MECHANICAL)

**Given:**
A selection of views of a balustrade bracket, a welding symbol, a title block and a table of questions. The drawings have not been prepared to the indicated scale.

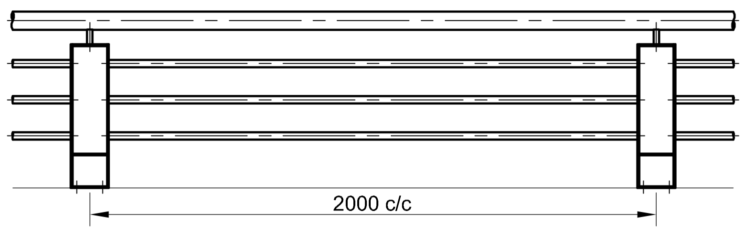
**Instructions:**
Complete the table below by neatly answering the questions, which all refer to the accompanying drawings and the title block. **[30]**




VIEW 3




VIEW 2




INSTALLATION DIAGRAM

| | QUESTIONS | ANSWERS | | | |
|---|---|---|---|---|---|
| 1 | With reference to the welding symbol, link the number on the drawing with the correct element in the column to the right of this question. | ARROW LINE | | 7 | |
| | | TAIL | | | |
| | | REFERENCE LINE | | | |
| | | WELDING PROCESS | | | |
| | | CONCAVE FINISH | | | |
| | | WELD ALL AROUND | | | |
| | | SIZE OF WELD | | | |
| 2 | When was the drawing approved? | | | 1 | |
| 3 | What is the manufacturing company's web address? | | | 1 | |
| 4 | What finish is required for the balustrade? | | | 1 | |
| 5 | What is the file name? | | | 1 | |
| 6 | What is the thickness of the plate used on the bracket? | | | 1 | |
| 7 | How many brackets must be manufactured? | | | 1 | |
| 8 | What would view 1 be called? | | | 1 | |
| 9 | What would view 3 be called? | | | 1 | |
| 10 | What size bolt is needed to secure the bracket? | | | 1 | |
| 11 | Determine the dimensions: A B C | | | 3 | |
| 12 | What is the centre-to-centre distance between two brackets? | | | 1 | |
| 13 | How many surfaces need to be welded on each bracket? | | | 2 | |
| 14 | What is feature D called on view 2? | | | 1 | |
| 15 | What is the meaning of the double arrow at E? | | | 1 | |
| 16 | If the permissible tolerance on a dimension is ± 0,5, determine the upper and lower tolerance on a dimension of 30 mm. | | | 2 | |
| 17 | In the box below, draw, in neat freehand, the symbol for the projection system used. | | | 4 | |
| | TOTAL | | | 30 | |

| | | | |
|---|---|---|---|
| FILE NAME: PM 12-PSC-347 | MATERIAL: 5 mm MILD STEEL PLATE | | |
| DRAWING No. 7 | FINISH: CHROME PLATED | ALL DIMENSIONS ARE IN MILLIMETRES. | |
| BALUSTRADE FOR PIET AND SONS CONTRACTORS 17 WALDO STREET DURBAN | DRAWING PROGRAMME: AUTOCAD 2008 | DRAWN BY: HAROLD | 2011/05/15 |
| | ALL UNSPECIFIED RADII ARE R3. | CHECKED BY: SALLY | 2011/05/25 |
| WELDTECH ENGINEERING | 51 PARK AVENUE NEWLANDS 4070 www.weldtech.co.za ☏ 031 645 7820 | APPROVED BY: GEORGE | 2011/06/01 |
| | | SCALE: 1 : 10 | |
| TITLE BALUSTRADE BRACKET | | QUANTITY: 26 BRACKETS | |

ANSWER 17

SYMBOL

| EXAMINATION NUMBER |
|---|
| |
| EXAMINATION NUMBER |



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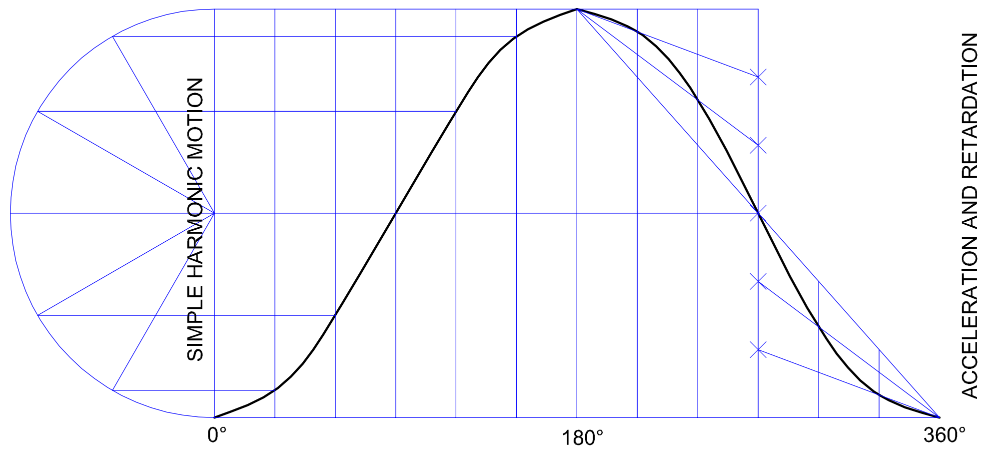



DISPLACEMENT GRAPH
SCALE 8 mm = 30°

## QUESTION 2: LOCI

**NOTE:** Answer QUESTIONS 2.1 AND 2.2.

### 2.1 CAM

**Given:**

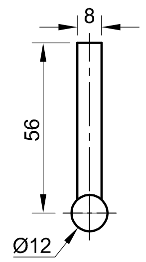
- The detail of a roller-ended follower and a displacement graph showing simple harmonic motion and uniform acceleration and retardation
- The vertical centre line of the cam profile

**Specifications:**

- Camshaft = Ø14 mm
- Minimum distance from the cam profile to the centre of the camshaft = 10 mm
- Rotation = clockwise

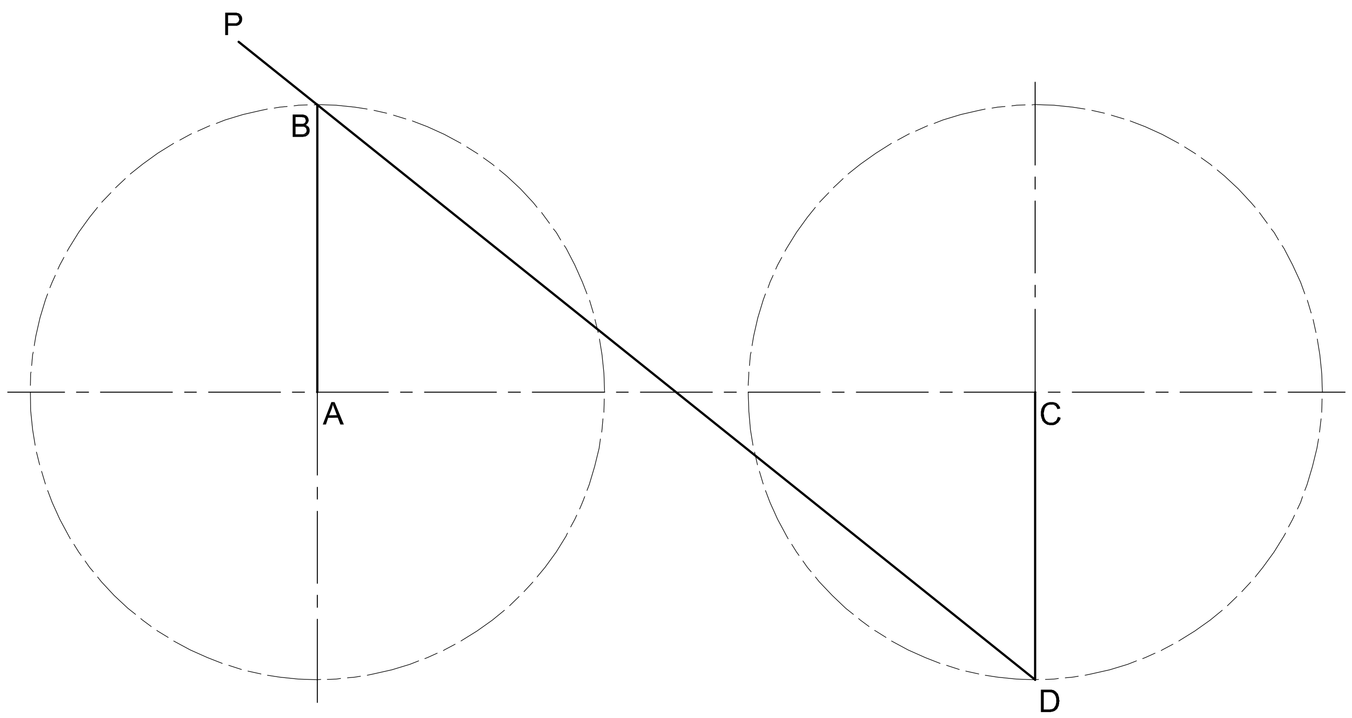
**Instructions:**

- Draw, to scale 1 : 1, the given follower detail so that it will reciprocate along the given centre line.
- From the given displacement graph, project and draw the cam profile.
- Show the centre line and the direction of rotation on the cam profile.
- Show ALL necessary construction. **[19]**




FOLLOWER DETAIL

| ASSESSMENT CRITERIA | | | | |
|---|---|---|---|---|
| 1. FOLLOWER + MIN. DIST' + CENTRE LINE + CAMSHAFT | 6 | | | |
| 2. CONSTRUCTION | 3 | | | |
| 3. PLOTTING + DIRECTION | 6 | | | |
| 4. CURVE | 4 | | | |
| **SUBTOTAL** | **19** | | | |




### 2.2 MECHANISM

**Given:**

A schematic diagram of a linked crank mechanism consisting of two cranks, AB and CD, joined by a rod, DP, which is fixed at D and slides through B.

**Motion:**

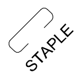
As crank AB rotates in an anticlockwise direction, crank CD rotates in a clockwise direction at the same velocity.

**Instructions:**

- Using the given diagram, trace the locus generated by point P for ONE complete revolution of the mechanism.
- Show ALL necessary construction. **[19]**

| ASSESSMENT CRITERIA | | | | |
|---|---|---|---|---|
| 1. CONSTRUCTION | 5 | | | |
| 2. LOCUS OF P | 14 | | | |
| **SUBTOTAL** | **19** | | | |
| **TOTAL** | **38** | | | |

| EXAMINATION NUMBER | |
|---|---|
| | |
| EXAMINATION NUMBER | 3 |




**QUESTION 3: ISOMETRIC DRAWING**

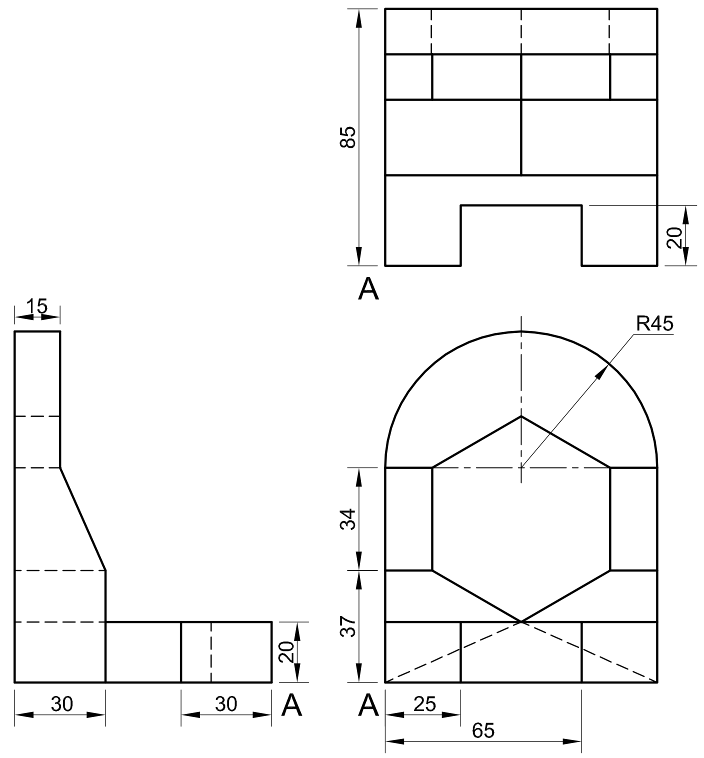
**Given:**

- The front view, top view and left view of a jig with a regular hexagonal hole
- The position of point A on the drawing sheet

**Instructions:**

Using scale 1 : 1, convert the orthographic views of the jig into an isometric drawing.

- Make A the lowest point of the drawing.
- Show ALL necessary construction.
- NO stencils may be used.
- NO hidden detail is required. **[39]**

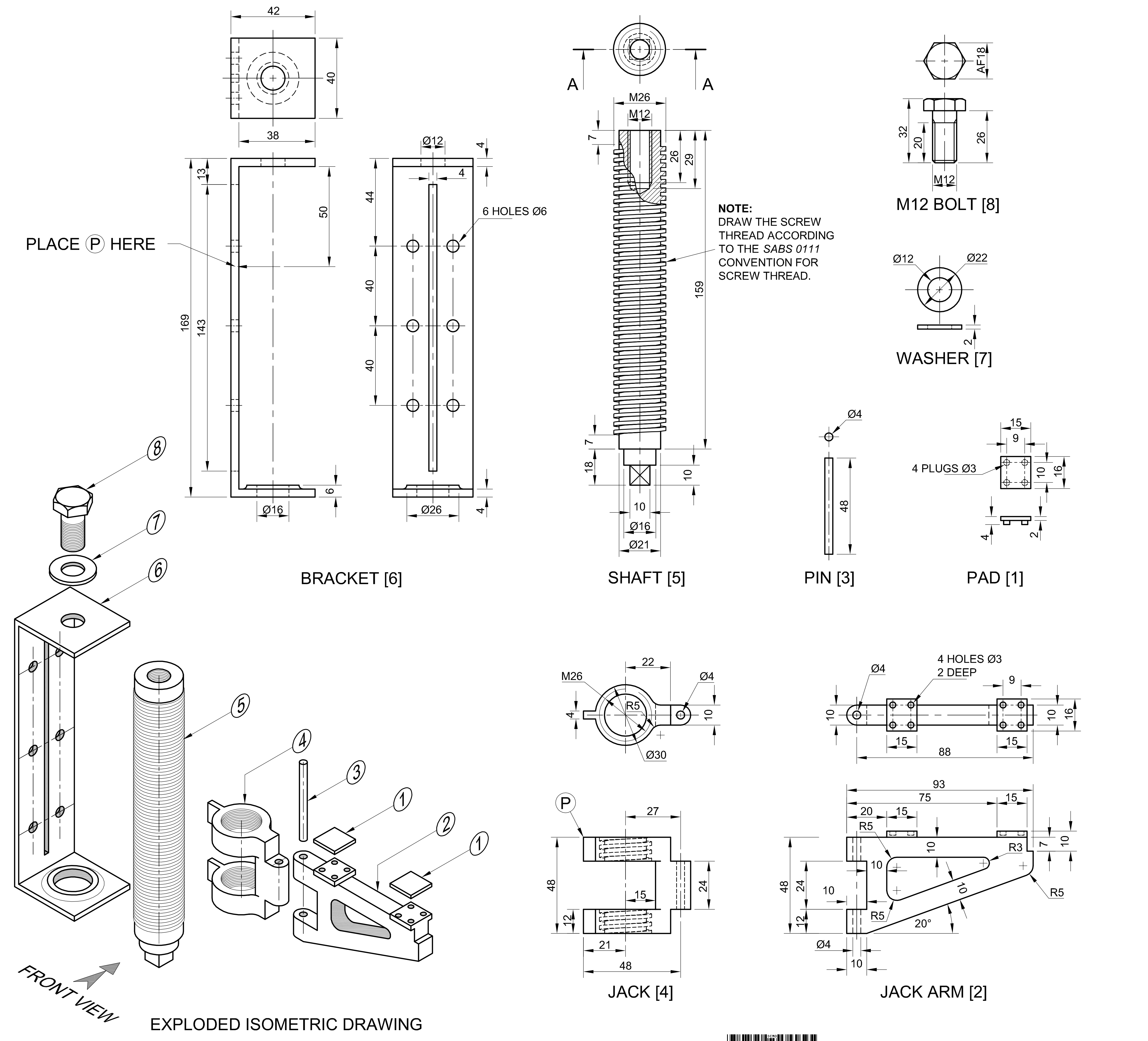



A

| ASSESSMENT CRITERIA | | | | |
|---|---|---|---|---|
| 1. AUXILIARY VIEW + PLACEMENT + CIRCLE CONSTRUCTION | 5 | | | |
| 2. ISO' CIRCLES + CENTRE LINES | 5 | | | |
| 3. ISO + NON-ISO' LINES | 18 | | | |
| 4. HEXAGON | 11 | | | |
| **TOTAL** | **39** | | | |

EXAMINATION NUMBER

EXAMINATION NUMBER | 4




**QUESTION 4: MECHANICAL ASSEMBLY**

**Given:**

- The exploded isometric drawing of the parts of a jack assembly, showing the position of each part relative to all the others
- Orthographic views of each of the parts of the jack assembly

**Instructions:**

- Answer this question on page 6.
- Draw, to scale 1 : 1 and in third-angle orthographic projection, the following views of the assembled parts of the jack assembly:
  - **4.1 A sectional front view** on cutting plane A-A, as seen from the direction of the arrow shown on the exploded isometric drawing. The cutting plane, which passes through the vertical centre line of the assembly, is shown on the top view of the shaft (part 5).
  - **4.2 The top view**
- ALL drawings must comply with the guidelines contained in the *SABS 0111*.

**NOTE:**

- As indicated, place point P on the jack at point P on the bracket.
- Show THREE faces of the M12 bolt and ALL necessary construction.
- NO hidden detail is required.

**Add the following features to the drawing:**

- The cutting plane A-A
- Label the sectional view SECTION A-A. **[93]**

**PARTS LIST**

| PART | QUANTITY | MATERIAL |
|---|---|---|
| 1. PAD | 2 | BRONZE |
| 2. JACK ARM | 1 | CAST IRON |
| 3. PIN | 1 | MILD STEEL |
| 4. JACK | 1 | CAST IRON |
| 5. SHAFT | 1 | MILD STEEL |
| 6. BRACKET | 1 | MILD STEEL |
| 7. WASHER | 1 | MILD STEEL |
| 8. M12 BOLT | 1 | MILD STEEL |

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# JACK ASSEMBLY

ALL DIMENSIONS ARE IN MILLIMETRES.

ALL UNSPECIFIED RADII ARE R2.



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STAPLE

| | | | | | |
|---|---|---|---|---|---|
| **ASSESSMENT CRITERIA** | | | | | |
| **SECTIONAL FRONT VIEW** | | | | | |
| 1 | PAD | 3 | | | |
| 2 | JACK ARM | 11 | | | |
| 3 | PIN | 1 | | | |
| 4 | JACK | $7\frac{1}{2}$ | | | |
| 5 | SHAFT | $14\frac{1}{2}$ | | | |
| 6 | BRACKET | 7 | | | |
| 7 | WASHER | 1 | | | |
| 8 | M12 BOLT | 11 | | | |
| 9 | HATCHING | 13 | | | |
| **SUBTOTAL** | | **69** | | | |
| **TOP VIEW** | | | | | |
| 1 | OUTLINE | 10 | | | |
| 2 | M12 BOLT + WASHER | 3 | | | |
| **SUBTOTAL** | | **13** | | | |
| **GENERAL** | | | | | |
| 1 | CENTRE LINES | 2 | | | |
| 2 | CUTTING PLANE + TITLE | 4 | | | |
| 3 | ASSEMBLY | 5 | | | |
| **SUBTOTAL** | | **11** | | | |
| **TOTAL** | | **93** | | | |
| EXAMINATION NUMBER | | | | | |
| | | | | | |
| EXAMINATION NUMBER | | | | | 6 |

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