



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATION/ NATIONAL SENIOR CERTIFICATE EXAMINATION

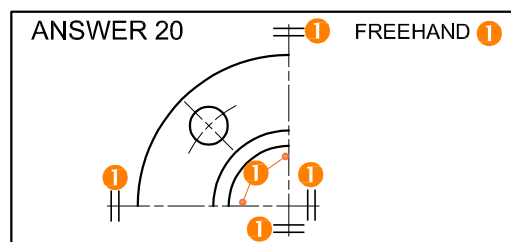
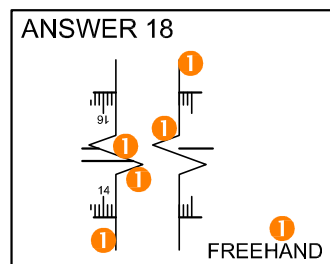
ENGINEERING GRAPHICS AND DESIGN P2

2023

MARKING GUIDELINES

These marking guidelines consist of 7 pages.

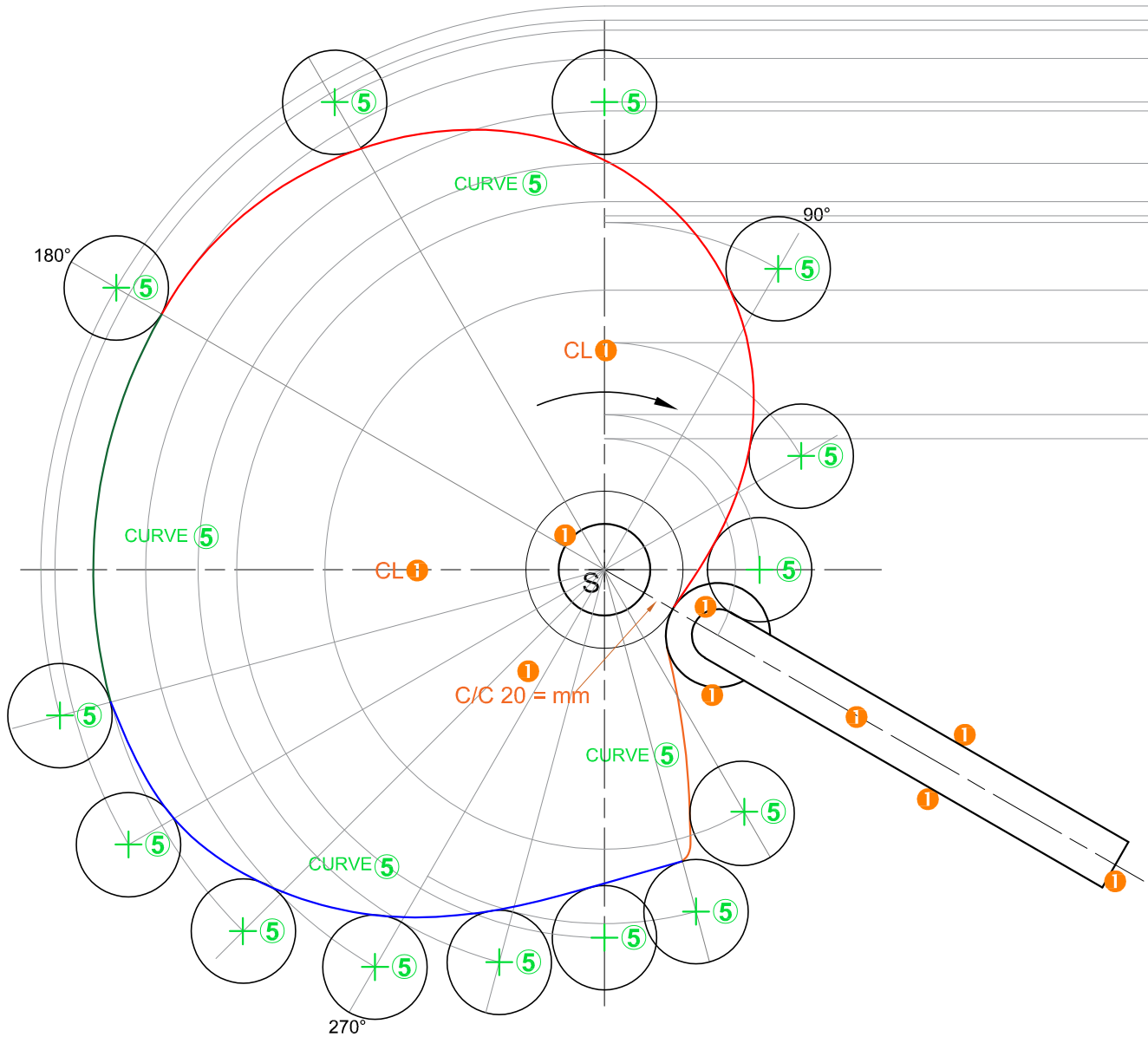
ANSWERS		
1	LISA	1
2	DRAWING NUMBER	1
3	COMBINATION SQUARE	1
4	PRECISION TOOLS	1
5	20 °C	1
6	GLASS	1
7	3000	1
8	THIRD ANGLE	1
9	SECTIONAL RIGHT VIEW	1
10	MULTI PLANE / OFF SET	1
11	REVOLVED	1
12	REMOVED	1
13	C: 17 D: 111 E: 14	3
14	9	1
15	DETAIL T	1
16	KNURLING	1
17	103,025 (MAX.) 102,95 (MIN.)	2
18	<i>See below</i>	3
19	L / =	1
	G / N7	1
	J / HONE	1
	H / 2	1
20	<i>See below</i>	3
TOTAL		30



PAPER 2 QUESTION 1
 GRADE 12
 JUNE 2023
 MARKING GUIDELINE

5. CAM PROFILE

- 14 CENTRE POINTS	7
- ROLLERS	2
- POINTS OF TANGENCY	2
- CURVE TANGENT TO GIVEN FOLLOWER	0,5
- CURVE QUALITY (4 x ½)	2
TOTAL	13½

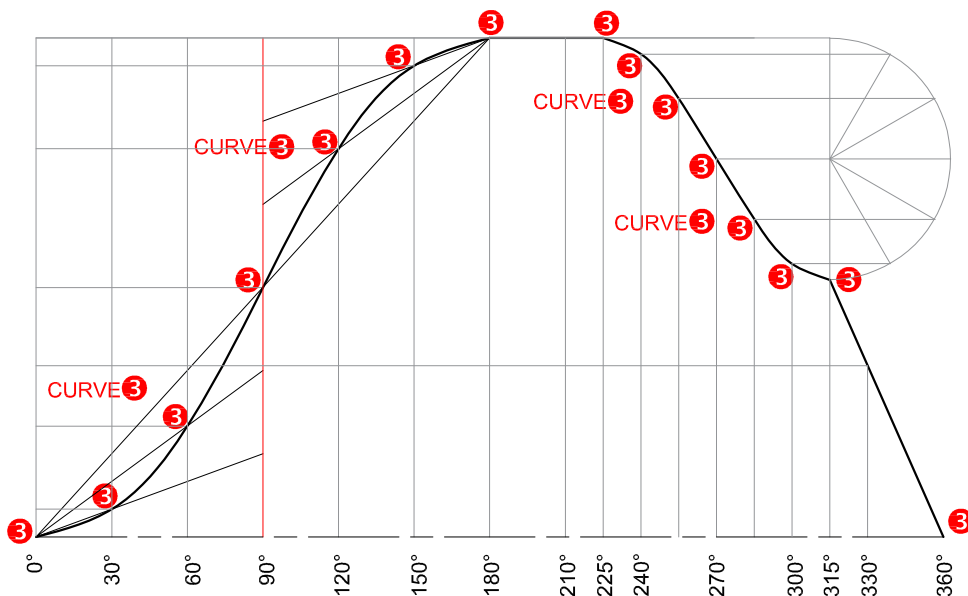


4. CAM CONSTRUCTION

- PROJECTION / TRANSFERRING FROM GRAPH	1
- CIRCLE DIVISION	1
- ARC PROJECTION / TRANSFER	1
- PLOT DIRECTION (ANTI-CLOCKWISE)	1
- ARROW (CLOCKWISE)	1
TOTAL	5

ASSESSMENT CRITERIA		
1	GIVEN + MINIMUM DISTANCE + CL	5
4	CAM CONSTRUCTION + ARROW	5
5	PLOTTING + CAM PROFILE	13½
TOTAL		23½

PAPER 2 QUESTION 2
 GRADE 12
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 MARKING GUIDELINE



DISPLACEMENT GRAPH ②

2. GRAPH CONSTRUCTION

- LENGTH (120) 1
- 12 EQUAL DIVISION 1
- TOTAL 2

2. UNIFORM ACCELERATION + RETARDATION CONSTRUCTION

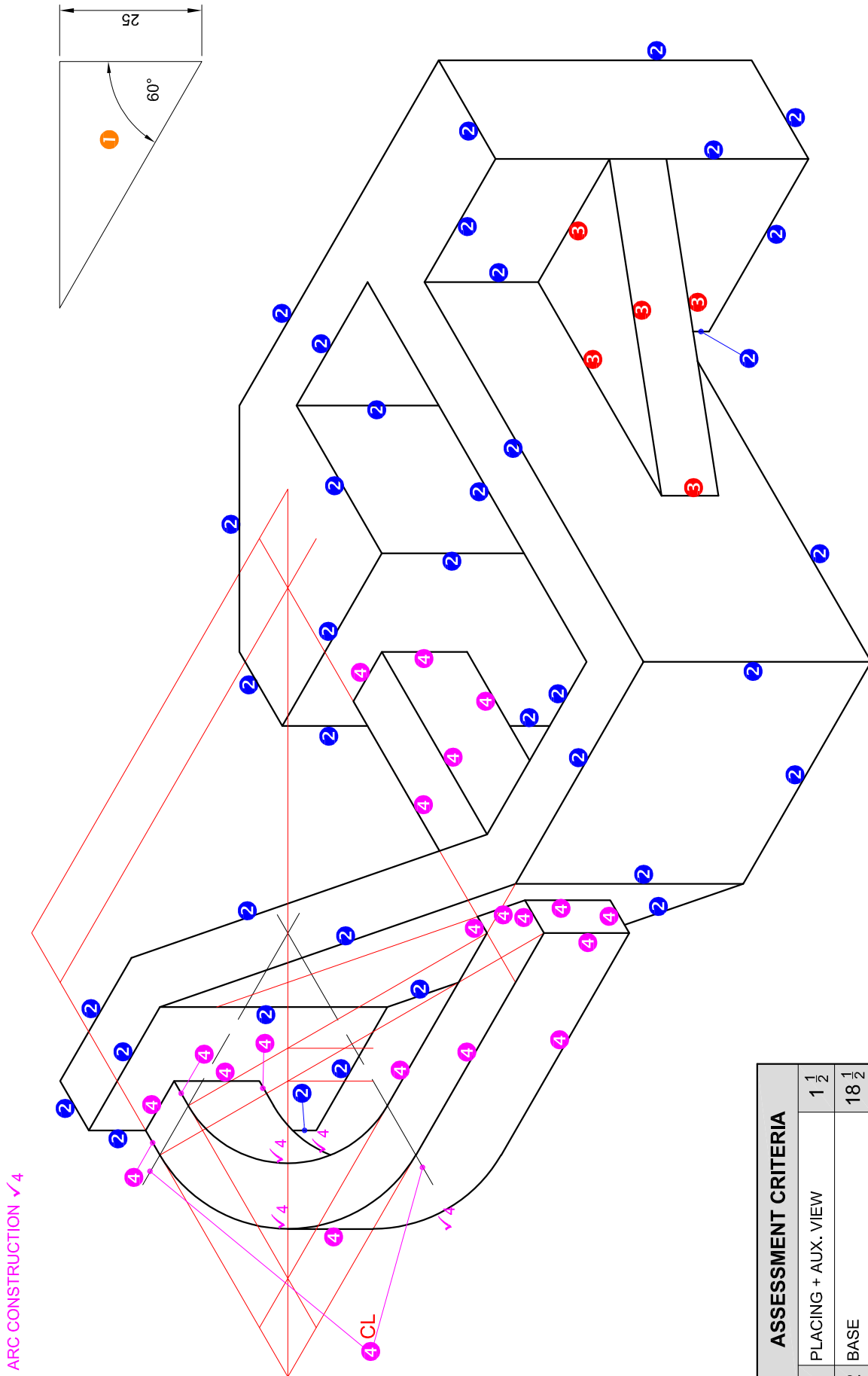
- VERTICAL DIVISION 0.5
- 1st HALF 0.5
- 2nd HALF 0.5
- TOTAL 1½

2. SIMPLE HARMONIC MOTION CONSTRUCTION

- SEMI CIRCLE 0.5
- CIRCLE DIVISION 0.5
- ADDITIONAL 15° DIVISIONS 0.5
- PROJECTION 0.5
- TOTAL 2

ASSESSMENT CRITERIA		
2	GRAPH CONSTRUCTION + LABELS	6
3	PLOTTING GRAPH + GRAPH CURVES	9½
TOTAL		15½

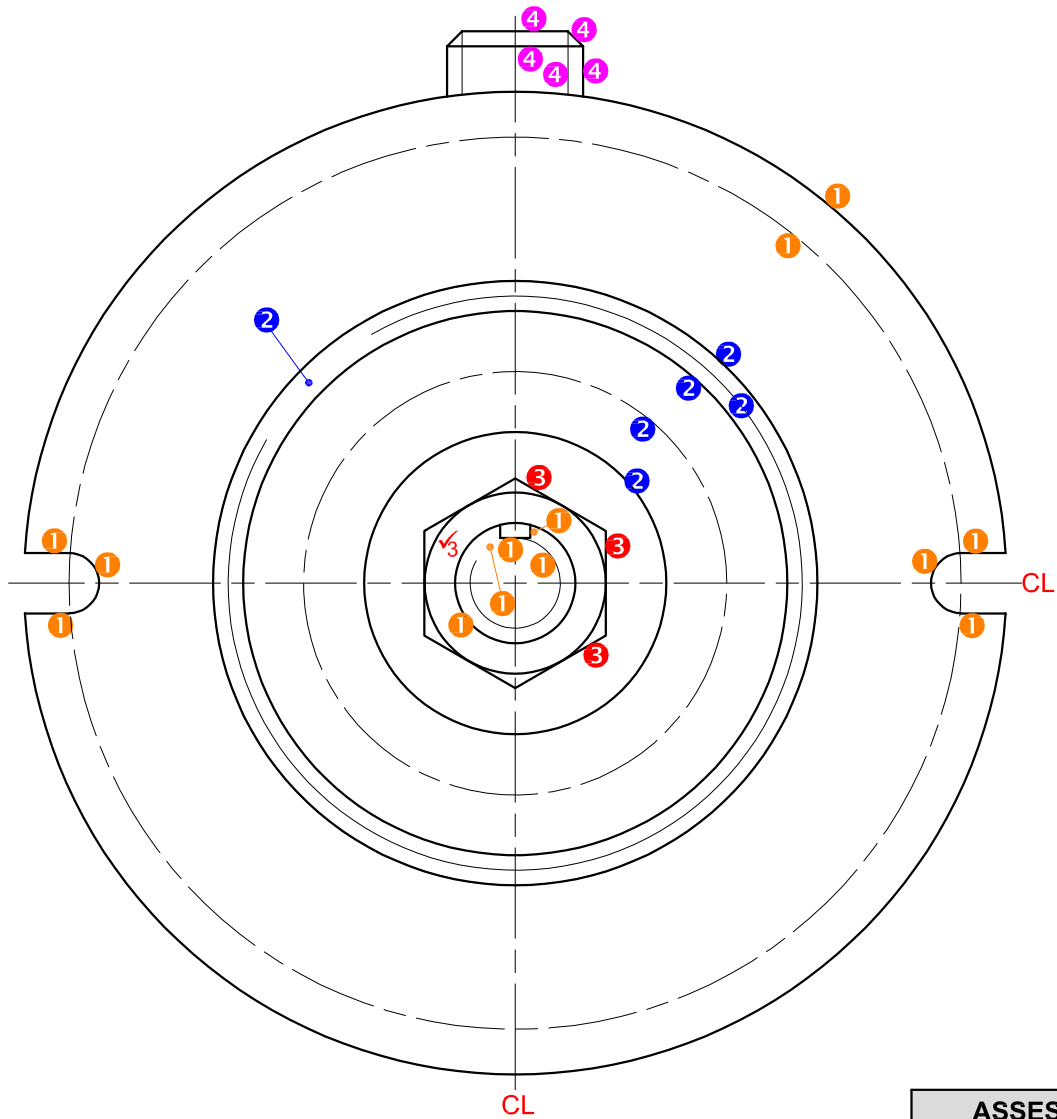
PAPER 2 QUESTION 2
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PAPER 2 QUESTION 3
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 MARKING GUIDELINE

P ✓ 1 PLACEMENT / ORIENTATION

ASSESSMENT CRITERIA		
1	PLACING + AUX. VIEW	1 ½
2	BASE	18 ½
3	WEB	2 ½
4	CIRCLE + CENTRE LINES + BRACE	15 ½
TOTAL		38



1. CENTRE LINES
SANS COMPLIANT 1
1 - 3 = 1; 4 - 5 = 2 2
3

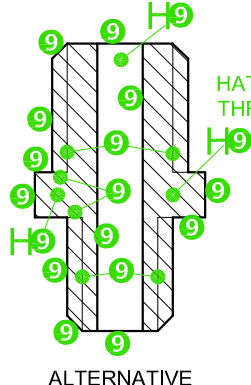
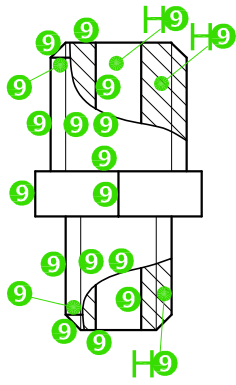
NOTE: THE CONVENTION
AND PCD CLs NOT INCLUDED

2. ASSEMBLY
1 MARK FOR EVERY COMPONENT CORRECTLY
ASSEMBLED (9 PARTS - 1) = 8

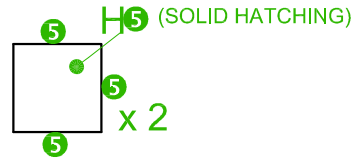
ASSESSMENT CRITERIA		
GENERAL		
1	CENTRE LINES	3
2	ASSEMBLY	8
SUBTOTAL		11

ASSESSMENT CRITERIA		
RIGHT VIEW		
1	HOUSING + SHAFT	6 $\frac{1}{2}$
2	BACK PLATE + COMPRESSOR WHEEL	3
3	M16 NUT	2 $\frac{1}{2}$
4	OIL LINE FITTING	2 $\frac{1}{2}$
SUBTOTAL		14 $\frac{1}{2}$

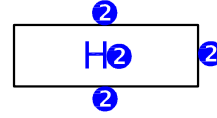
PAPER 2 QUESTION 4
GRADE 12
2023
MARKING GUIDELINES



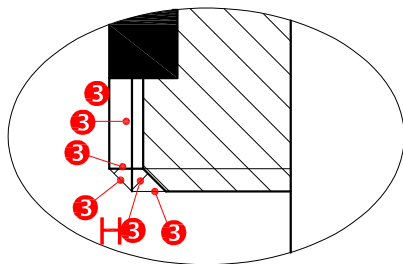
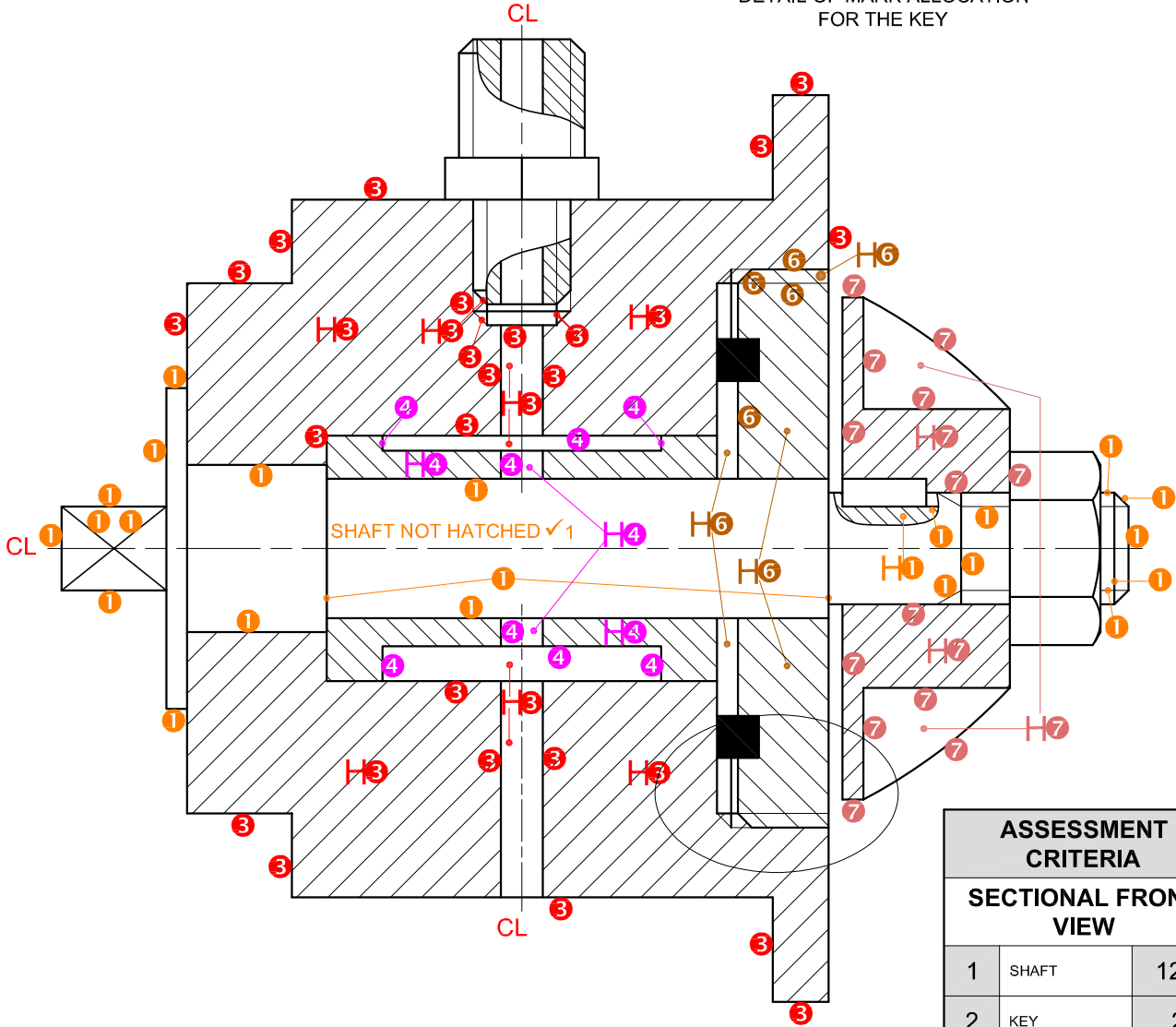
HATCHING THROUGH ALL
THREAD ✓



DETAIL OF MARK ALLOCATION
FOR THE SECTIONED SEAL



DETAIL OF MARK ALLOCATION
FOR THE KEY



ASSESSMENT CRITERIA		
SECTIONAL FRONT VIEW		
1	SHAFT	12 ¹ / ₂
2	KEY	2
3	HOUSING	18
4	BUSH	5 ¹ / ₂
5	RUBBER SEAL	4
6	BACK PLATE	3 ¹ / ₂
7	COMPRESSOR WHEEL	8
8	M16 NUT	4
9	OIL LINE FITTING	10
SUBTOTAL		67 ¹/₂

PAPER 2 QUESTION 4
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