

071605T4MCT

MECHATRONIC TECHNOLOGY LEVEL 5

ENG/OS/MC/CR/02/5

Maintain Electro-Mechanical Systems

July/August 2025



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

PRACTICAL ASSESSMENT

INSTRUCTIONS TO ASSESSOR

1. Assess the candidate as the practical progresses observing the critical areas
2. You are required to mark the practical as the candidate perform the tasks
3. You are required to take video clips at critical points
4. Ensure the candidate has a name tag and registration code at the back and front

OBSERVATION CHECKLIST

Candidate's Name & Registration Code			
Assessors Name & Registration Code			
Venue of Assessment			
Date of Assessment			
Items to be Evaluated: <i>Please award marks as appropriate. Give a brief comment on your observation.</i>	Marks Available	Marks Obtained	Comments
1. Wore appropriate PPEs. i. Overall/Dust coat. ii. Safety boots. <i>(Award 1 mark each)</i>	2		
TASK A: Interpreted the wiring diagram starter for three phase motor.			
2. Correctly identified and labelled the following components of DOL starter: i. Three-pole circuit breaker. ii. Contactor. iii. Thermal overload relay. <i>(Award 2 marks each)</i>	6		
3. Correctly drew and labelled the control diagram of DOL starter. <i>(Award 3 marks for correct circuit and 2 marks for labelling)</i>	5		
Sub-Total 1	11		
TASK B: Completed the installation of electrical system by installing the control circuit.			
4. Correctly mounted the following components:	2		

i. Start push button. ii. Stop push button. <i>(Award 1 marks each)</i>			
5. Correctly labelled the following components: i. Start push button. ii. Stop push button. <i>(Award 1 marks each)</i>	2		
6. Performed correct connection to the following components as per IEE standards. i. Contactor. ii. Thermal overload relay. iii. Start push button. iv. Stop push button. <i>(Award 2 marks each)</i>	8		
7. Correctly used the installation tools i. Cable stripper. ii. Screw drivers iii. Side cutter. <i>(Award 1 marks each)</i>	3		
Sub-Total 2	15		
TASK C: Installed the mechanical system.			
8. Firmly mounted the driving sprocket on the motor with the use of the key. <i>(Award 3 marks)</i>	3		
9. Firmly mounted the driven sprocket on the pre-installed shaft with the use of the key. <i>(Award 3 marks)</i>	3		

10. Correctly mounted the chain on the sprockets with appropriate allowance. (Award 3 marks)	3		
11. Correctly used the following tools: i. Mallet. ii. Allen key. (Award 1 marks each)	2		
Sub-Total 3	11		
TASK D: Tested the system.			
12. Performed continuity test on the electrical system. (Award 3 marks)	3		
13. Inspected the firmness of the mechanical system. (Award 3 marks)	3		
14. Tested the functionality of the syst (Award 4 marks)	4		
Sub-Total 4	10		
TASK E: Maintained the electromechanical system.			
15. Greased the bracket bearing and the sprockets and chain. (Award 3 marks)	3		
16. Performed housekeeping. (Award 2 marks)	2		
Sub-Total 5	5		
GRAND TOTAL	54		

ASSESSMENT OUTCOME	
The candidate was found to be: Competent ☐ Not yet Competent ☐ <i>(Please tick as appropriate)</i> <i>(The candidate is competent if the candidate obtains at least 50%)</i>	
Feedback from the Candidate:	
Feedback to the Candidate:	
Candidate Signature	Date:
Assessor's Signature	Date

Appendix:

Firmly mount the motor and install the DOL wiring diagram in **Figure 1** and the mechanical system in **Figure 3** before the starting of this assessment. This system simulates a system where a motor is used to drive a conveyor. Chain drive is used for power transmission from the motor to other parts of the system. When the start PB is pressed, the shaft of the motor rotates together with the sprocket mounted on it in clockwise direction therefore driving the other sprocket via chain.

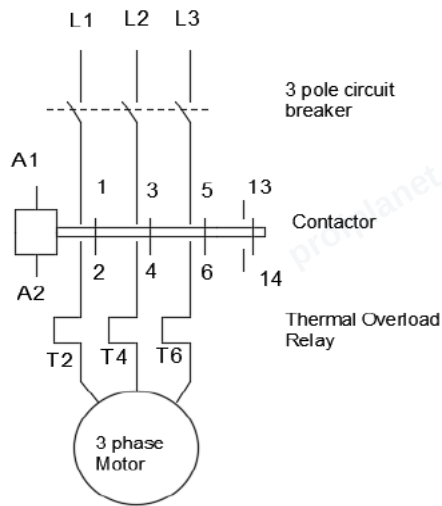


Figure 1: DOL Wiring Diagram

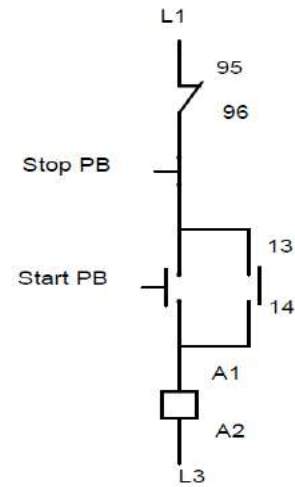


Figure 2: Control circuit diagram

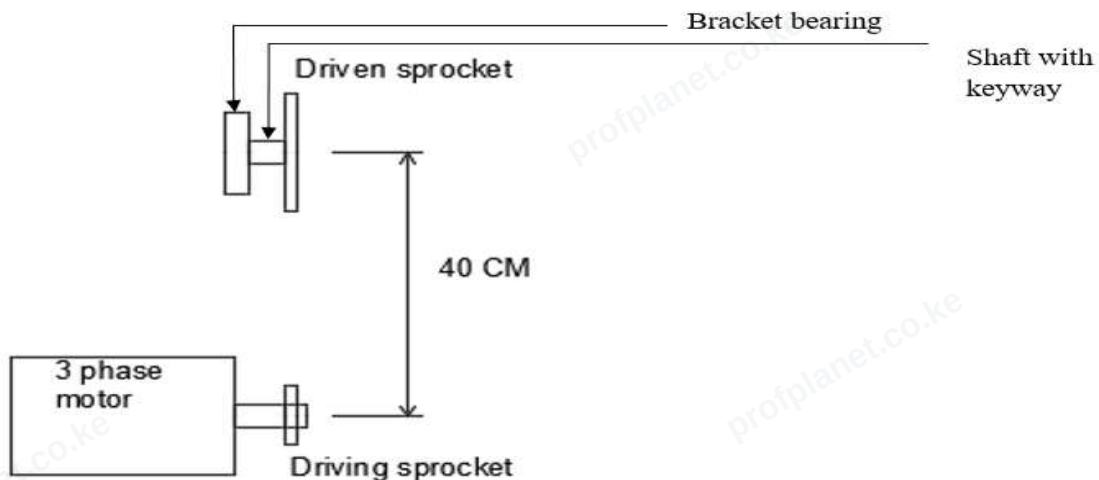


Figure 3: Mechanical assembly.