

071605T4MCT

MECHATRONICS TECHNICIAN LEVEL 5

ENG/OS/MC/CR/01/5/A

Install Mechatronic Systems

July/August 2023



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

PRACTI

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INSTRUCTIONS TO THE ASSESSOR

1. You are required to mark the practical date performs the tasks.
2. You are required to take photos and/or video clips at critical points.
3. Ensure the candidate has a name tag and registration code at the back and front.

This paper consists of FIVE printed pages.

Assessor should check the paper to ascertain that all the pages are printed as indicated and that no pages are missing.

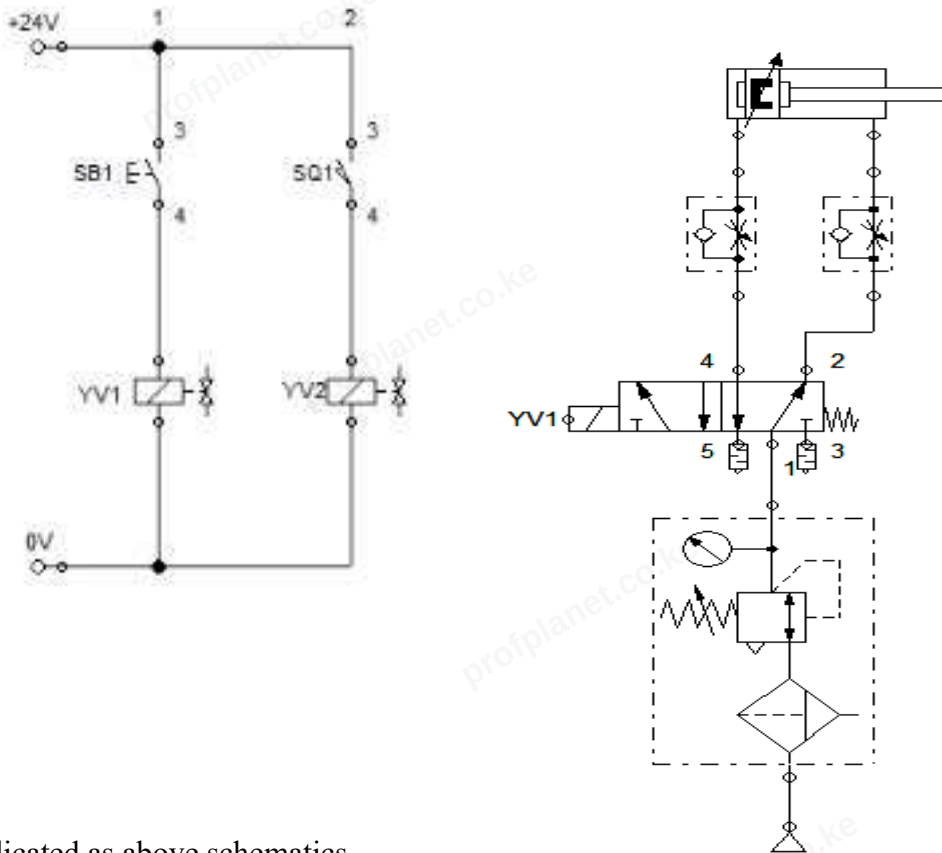
OBSERVATION CHECKLIST

Candidate's Name & Registration No.			
Assessor's Name & Reg. Code			
Venue of Assessment			
Date of assessment			
<i>(Indicate the marks available and marks obtained respectively. Award marks appropriately as guided for in the items for evaluation indicated. Give a brief comment where necessary)</i>			
Items to be evaluated:	Marks Allocated	Marks Obtained	Comments
1. Donned PPEs according to OSHA standards i. Overall/dust coat ii. Safety boot <i>Award 1 mark for each PPE donned</i>	2		
2. Identified wiring Materials according to the specifications i. Power supply ii. Push button iii. Micro-switch iv. $5/2$ solenoid valve v. Double acting cylinder <i>Award 1 mark for identifying each component</i>	5		
3. Identified tools and equipment according to the job requirement i. Multimeter ii. Tester <i>Award 1 mark for each tool identified</i>	2		
4. Installed the wiring circuit according to wiring diagram	3		

i. Powered the SB module <i>Award 1 mark</i> ii. Powered the valve <i>award 2 marks</i>			
5. Installed the pneumatic circuit i. Solenoid valve <i>award 1mark</i> ii. Limit switch <i>award 1 mark</i> iii. Double acting cylinder <i>award 1mark</i>	3		
6. Turned on the system; i. Turned on the compressor. <i>award 1mark</i> ii. Switched the power <i>award 1 mark</i> iii. Opened the air supply valves <i>award 1 mark</i>	3		
7. Tested and commissioned electrical wiring f operation according design specifications i. The cylinder extends when the SB1 i <i>Award 2 marks</i> ii. Retracts when SQ1 is activated <i>Award 2 marks</i>	4		
8. Tuned the pneumatic circuit to achieve optimum pressure <i>Award 1 marks for tuning extending pressure, award 1 mark for tuning the retracting pressure and 1mark for uniform pressure in extending and retracting.</i>	3		
9. Closed the FRL unit valve before disassembly of the pneumatic circuit <i>Award 1 mark or zero</i>	1		
10. Switched off the power before disassemble of electrical components <i>Award 1 mark or zero</i>	1		

11. Disassembled the pneumatic circuit & disassemble the electrical circuit <i>Award 2 marks for the use of correct tools in disassembly</i>	1		
12. Observed good housekeeping standards <i>Award 1 mark for dismantling, 1 mark for cleaning the workstation and 1 mark for proper material storage</i>	2		

TOTAL		30		
The candidate was found to be: Competent ☐ Not yet competent ☐				
<i>(Please tick as appropriate)</i>				
<i>(The candidate is competent if the candidate score is 20 or more)</i>				
Feedback from candidate:				
Feedback to candidate:				
Candidate's signature:		Date:		
Assessor's signature:		Date:		

Expected Results

Indicated as above schematics,

Principle states:

Press the button SB1, solenoid YV1 energized, solenoid valve reversing, cylinder extend out;

When the cylinder detects head touch the stroke switch SQ1, YV2 is energized, solenoid valve reversing cylinder retrace back thus to finish once reciprocating loop.

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