



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

Qualification Code : 071606T4MCT
Qualification : Mechatronic Technician Level 6
Unit Code : ENG/OS/MC/CR/05/6/A
Unit of Competency : Carry out mechatronic programming

PRACTICAL ASSESSMENT

INSTRUCTIONS TO CANDIDATE

1. In this practical assessment, you are required to perform the following tasks:
 - a. Install and use PLC application software
 - b. Interpret a tag table and install PLC components
 - c. Configure and test PLC system
2. You will be allocated **3 HOURS** to complete the practical task.
3. The assessor will record your performance at critical points using audio-visual means

TASK:

- i. Perform loop composition and principle by disassembly loop composed of stroke switch and shuttle valve.
- ii. Perform PLC programming.

The hydraulic control schematic indicated as follows:

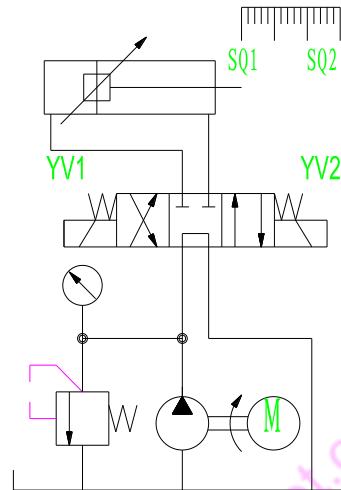


Figure 1: Hydraulic schematic 4

The electrical schematic diagram:

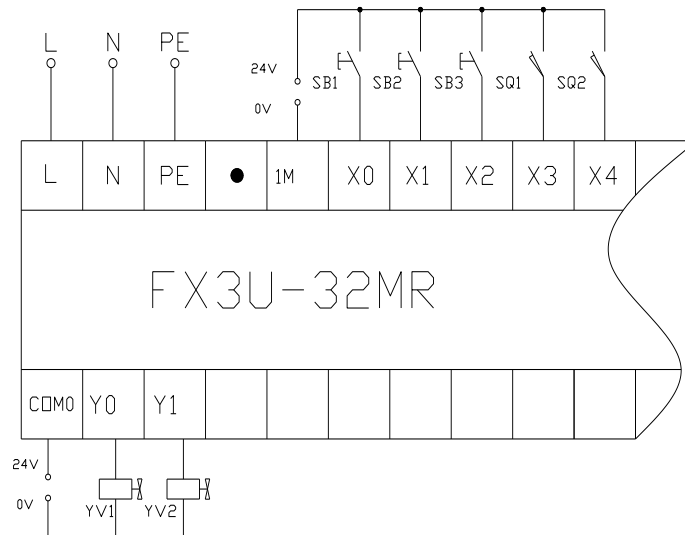


Figure 2: Electrical wiring schematic

Required operation:

- Using the PLC module and the stroke switch control solenoid valve, in order to achieve the hydraulic cylinder reciprocating action.
- The stroke switch adjusts the travel distance of the cylinder.
- The system pressure is set by the relief valve.
- Press the self-locking button SB1, the system starts.
- Hydraulic cylinder hit the limit switch SQ1, hydraulic cylinder extends out, hit the beginning of the head of SQ2, hydraulic cylinder return, cycle as such.
- Press the reset button SB2, system stops.
- Press self-reset button SB3, system reset.
- Release the self-reset button SB3, press start button SB1 to restart the system

Tasks:

- 1) Select necessary components and connect loop and circuit according to schematic diagram;
- 2) Develop PLC program to perform the operation using GX Works2.
- 3) Download the program to the PLC.
- 4) Start motor and run the system with presence of the assessor;
- 5) Stop the oil pump, take off the oil tube and hydraulic components and put into the drawers, clean them after finishing the practical.