Title: **Sealing Circuit** Job: 6

Course: Intro to Automation Unit: Manual Motor Control CLO: 2

Name _____ Grade _____ Date _____

Objectives

1. Student shall identify the purpose for a sealing control circuit.
2. Student shall develop a foundation of knowledge for an “OR” circuit.
3. Student shall analyze the circuit and determine its inherent problem.

Assessment

Students shall demonstrate a comprehension of the objectives listed above by scoring a minimum of 75% on this Job. Grading shall be based on instructor evaluation.

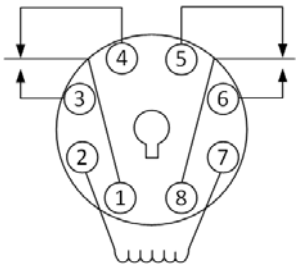
Devices

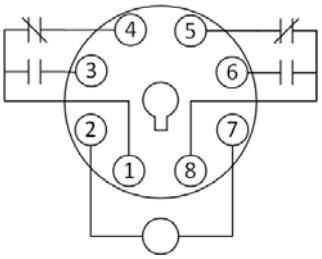
Inputs		
Device	*Description*	*Symbol*
Dual Action Pushbutton	Seals the Circuit	SEAL
Outputs		
Device	*Description*	*Symbol*
Green Pilot Light	Circuit is Sealed	SEALED
Eight-Pin Relay	Control Relay	CR1

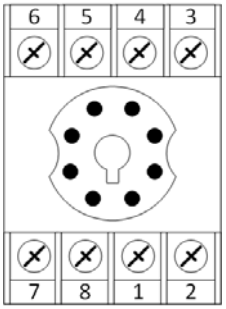
Instructions

Wire the schematic found on page 2. Ensure to use the proper colored wire and label all wires with the appropriate wire number. Have the instructor review your circuit before energizing the panel. After obtaining approval, energize the circuit and follow the steps in the table below.

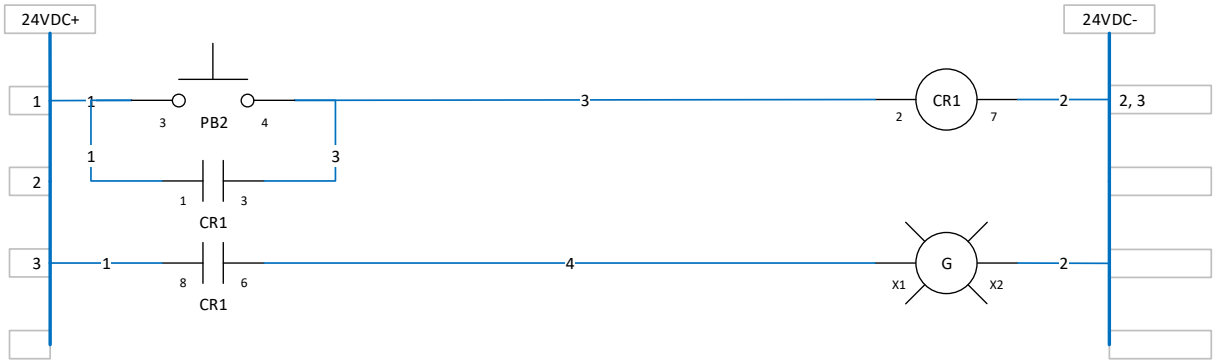
Diagram







Schematic



1. After energizing the circuit but before pressing PB2, complete row *Step 1* in the following truth table.

Step	PB2	CR1 1-3	CR1 8-6	CR1	Green Light
1	0				
2	1				
3	0				

2. Press and hold PB2, complete row *Step 2* in the above truth table.
3. Release PB2 and complete row *Step 3* in the above truth table.
4. Explain why the relay stays energized and the pilot light stays lit even though the pushbutton is no longer depressed.

_____

5. This circuit has an inherent problem. What is the problem?

_____

6. Notice that CR1 pin 1 is connected to +24VDC and pin 3 is connected to PB2 terminal 4. Would connecting CR1 pin 3 to +24VDC and pin 1 and PB2 terminal 4 work as well? _____

   Why would this not be an ideal configuration?

_____

7. There is a way to simplify this circuit to only use one set of contacts. How can this be done? Draw your solution below.