**Unit: Manual Motor Controls Job: 15**

**Title: Forward/Reverse of a 1P Motor using Three Pushbuttons CLO# 2**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Station \_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**

1. Recognize how to change directional rotation of a single-phase motor.
2. Translate reversing logic when given a different set of inputs.
3. Contrast different reversing control logic methods.

**Assessment**

Students shall demonstrate a comprehension of the objectives listed above by scoring a minimum of 75% on this shop job. Grading shall be based on the Manual Motor Controls rubric.

**Instructions**

Design a forward/reverse motor control circuit using three momentary pushbuttons. One pushbutton shall be a “forward” button. When the forward button is pressed, the motor shall start and continue to run in a counter-clockwise (CCW) fashion even if the “forward” button is no longer pressed. Another pushbutton shall be the “reverse” button. When the reverse button is pressed, the motor shall start and continue to run in a clockwise (CW) fashion even if the “reverse” button is no longer pressed. The remaining pushbutton shall be a “stop” button. If the “stop” button is pressed, the motor shall stop. While the motor is running, the green light shall come on and the red light shall be off. If the motor is running forward, the yellow light shall be illuminated. If the motor is running in reverse, the blue light shall be illuminated. When the motor is not running, the green light shall be off and the red light shall be on (even if the stop button is pressed). Use the space on the opposite side of this page to design your circuit. HINT: You shall need three control relays to complete this job. Once complete, review your design with your instructor. After obtaining approval, you may wire your circuit. Label all wires with the appropriate wire numbers. Instructor reviews your wiring before you energizing the circuit.

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| --- | --- | --- | --- |
|  |  | Black | Red |
| Forward | Counter Clockwise (CCW) | A | 5 |
| Reverse | Clockwise (CW) | 5 | A |

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