Title: **Stop-Start-Jog using Selector Switch for a 1P Motor Circuit** Job: 10

Course: Introduction to Automation Unit: Introduction of PLC CLO: 4

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade \_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**

1. Student shall reinforce their knowledge of a stop/start/jog motor control circuit.
2. Student shall develop a knowledge of how to create a jog circuit using a selector switch.
3. Student shall apply this circuit in a motor control scenario.

**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 Introduction to PLC rubric.

**Devices**

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| Inputs | | |
| *Device* | *Description* | *Symbol* |
| NC Mushroom Head Pushbutton (ESTOP) | Emergency Stop | ESTOP |
| Two-position Selector Switch | Run/Jog Mode (A = Run, B = Jog) | RUN\_JOG |
| NC Pushbutton (PB1) | Stop Motor | STOP |
| NO Pushbutton (PB2) | Start Motor | START |
| Control Relay Contacts | Motor Status | CR1\_STAT |
| Outputs | | |
| *Device* | *Description* | *Symbol* |
| Green Pilot Light | Motor Running | RUNNING |
| Red Pilot Light | Motor Stopped | STOPPED |
| Blue Pilot Light | Motor Jogging | JOGGING |
| 8-Pin 24VDC Control Relay | Motor Control | CR1 |

**Instructions**

Design a stop/start/jog motor control circuit using two momentary pushbuttons and a two-position selector switch. The circuit will also utilize a latching mushroom head pushbutton to act as an “ESTOP” as well. If the ESTOP is pressed, the motor shall stop and not be able to be restarted and/or jogged until the “ESTOP” is disengaged. The two pushbuttons shall be traditional stop and start buttons with the selector switch in the “run” mode. If the operator rotates the selector switch to the “jog” mode, the start button shall operate as a jog rather than a start button. Whenever the motor is running (but not being jogged), the green light shall come on. Whenever the motor is running in “jog” mode, the blue light shall illuminate. Whenever the motor is not running, the red light shall be on. No two lights shall be on at the same time. Use the space on the opposite side of this page to design the circuit. Once complete, review the design with the instructor. After obtaining approval, configure the program in RSLogix 500. Have the instructor review the program before downloading. Once the program has been reviewed, verify and download the program.

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1. Discuss the design with the instructor. Instructor Initials \_\_\_\_\_\_\_
2. Configure, verify the program in RSLogix 500.
3. Have instructor review the program before downloading. Initials \_\_\_\_\_\_\_