Lab 6 **1. Modifying programs using branching instructions**

2. Calling Programs

Student Name: _____

Assignment:

The student will create a program that runs an infinite loop:

- **Continue practicing the concept of saving programs before modifications**
- **Practice modifying a program by inserting lines and addition instructions**
- **Use the LBL and JUMP LBL**
- **Create a program that calls a group of programs in a specified sequence utilizing unconditional branching instructions.**
- **Create two programs that will call a specific program based on a program select register utilizing branching instructions IF and SELECT.**
- **Understand the differences between IF and SELECT instructions.**

Part I:

Step: **1** Power up the robot in a safe fashion.

2 Copy PROG2 and name the new program PROG3.

3 Modify PROG3 to run on an infinite loop utilizing the insert feature on ED_CMD to create new lines.

PROG3

1. J PR[1:HOME] 100% FINE
2: **LBL [1]**
3: J P[2] 100% CNT80
4: L P[3] 2000mm/s CNT80
5: L P[4] 2000mm/s CNT80
6: L P[5] 2000mm/s CNT80
7: L P[2] 2000mm/s CNT80
8: WAIT 1 SEC
9: **JMP LBL [1]**

END

4 Perform all testing and test run your copied program from the teach pendant, and then execute it from the cycle start button on the operator panel.

5 Modify and TOUCHUP other motion instruction components to alter the execution of the task at your discretion.

6 Power down the robot safely.

Part II:

Step: **1** Power up controller.

2 Create a new program called MAIN. This program will:

3 Loop forever calling a group of programs in a specific sequence.

4 Verify that none of the programs being called by MAIN contain an infinite loop (PROG3).

```
MAIN:
1: LBL [1]
2: CALL PROG1
3: CALL PROG2
4: CALL PROG3
5: JMP LBL[1]
END
```

5 Create a new program called MAIN1. This program will:

6 Loop forever until a value within a specific range has been entered on the program select register.

```
MAIN1:
1:LBL[1]
2: IF R[5:PRGSLCT]=1 CALL PROG1
3: IF R[5:PRGSLCT]=2 CALL PROG2
4: IF R[5:PRGSLCT]=3 CALL PROG3
5: JMP LBL [1]
END
```

7 Once the program has captured a valid number, it will execute this program until a new valued has been entered.

8 Create a new program called MAIN2. This program will:

9 Loop forever until a value within a specific range has been entered on the program select register.

```
MAIN2:
1:LBL[1]
2: SELECT R[5:PRGSLCT]=1, CALL PROG1
3:                    =2, CALL PROG2
4:                    =3, CALL PROG3
5: ELSE JMP LBL[1]
END
```

10 Once the program has captured a valid number, it will execute this program once and then it will move on to the next instruction.

11 Verify that all programs run as expected.

12 Power down the controller.

Completed: ☐

Instructor: _____

NOTES: