

Lab 5 Register Instructions

Student Name: _____

Assignment: The student will:

- **Create and run a counter program.**
 - **Create and run an offset program.**
 - **Assign and set registers and position registers**
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Condition: A FANUC robot and controller loaded with HandlingTool application software

- Step:**
- 1 Power up controller.
 - 2 Copy PROG2 and name the new program COUNTER.
 - 3 Modify this program to cycle a predefined number of cycles and then end program.
 - 4 To accomplish this you need to:
 - 5 Assign a register at the DATA screen as your counter register.
 - 6 Initialize register outside the main loop within the program.
 - 7 Increment register within each loop.
 - 8 Use a conditional branching instruction to monitor the number of cycles executed while the program runs.

Refer to
Section 10.7.5

COUNTER:

```
1: R[1:COUNTER] = 0
2: J PR[1:HOME] 100% FINE
3: LBL [1]
4: J P[2] 100% CNT80
5: L P[3] 2000mm/s CNT80
6: L P[4] 2000mm/s CNT80
7: L P[5] 2000mm/s CNT80
8: L P[2] 2000mm/s CNT80
9: R[1:COUNTER]=R[1:COUNTER]+1
10: IF R[1:COUNTER]<5 JMP LBL [1]
11: J PR[1:HOME] 100% FINE
END
```

DATA REGISTERS :

```
1. R[1 :COUNTER] = 0
```

POSITION REGISTERS :

```
1. PR[1 :HOME] = R
```

- 9 Copy COUNTER program and name it OFFSET.
- 10 Modify this program to move up a specific distance a predetermined number of times.
- 11 To accomplish this you need to:
- 12 Assign a position register to store the positional offset and manually enter a value of zero on all six elements at the DATA screen.
- 13 Initialize both registers (counter and offset – use same counter register from previous program) outside main loop.
- 14 Increment counter register within each loop.
- 15 Increment the Z element of offset register by about 25mm on each cycle.
- 16 Use a conditional branching instruction to monitor the number of cycles executed while the program runs.

OFFSET:

```

1: PR[2,3:OFFSET] = 0
2: R[1:COUNTER] = 0
3: J PR[1:HOME] 100% FINE
4: LBL [1]
5: L P[2] 2000mm/s CNT80 OFFSET PR[2:OFFSET]
6: L P[3] 2000mm/s CNT80 OFFSET PR[2:OFFSET]
7: L P[4] 2000mm/s CNT80 OFFSET PR[2:OFFSET]
8: L P[5] 2000mm/s CNT80 OFFSET PR[2:OFFSET]
9: L P[2] 2000mm/s CNT80 OFFSET PR[2:OFFSET]
10: PR[2,3:OFFSET]=PR[2,3:OFFSET]+25
11: R[1:COUNTER]=R[1:COUNTER]+1
12: IF R[1:COUNTER]<5 JMP LBL [1]
13: J PR[1:HOME] 100% FINE
END

```

DATA REGISTERS :

```
1. R[1 :COUNTER] = 0
```

POSITION REGISTERS :

```
1. PR[1 :HOME] = R
```

```
2. PR[2:OFFSET] = R
```

```
PR [2] : X=0.00 Y=0.00
          Z=0.00
          W=0.00 P=0.00
          R=0.00
```

R=Recorded

Completed:

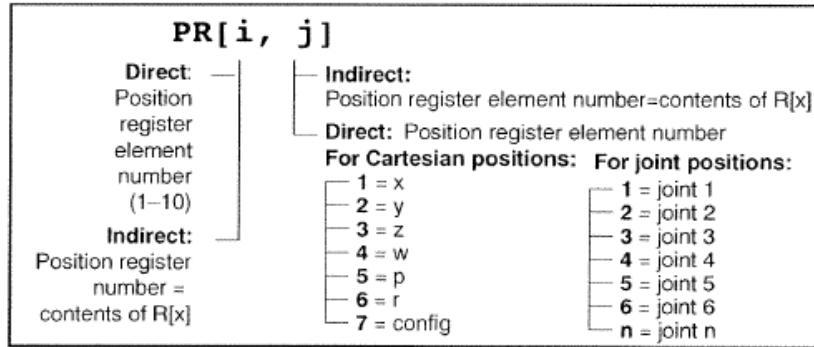
Instructor: _____

10.7.5 PR[i,j] Position Register Element Instructions

PR[i,j] position register element instructions manipulate a specific position register element. A position register element is one element of a specified position register. In the designation PR[i,j], the *i* represents the position register number and the *j* represents the position register element.

Position register element instructions include assignment, addition, and subtraction instructions.

Figure 10-23 Position Register Element PR[i,j]



PR[i,j] = [value]
PR[.....] = ...

Figure 10-24 PR[i,j] = [value]

