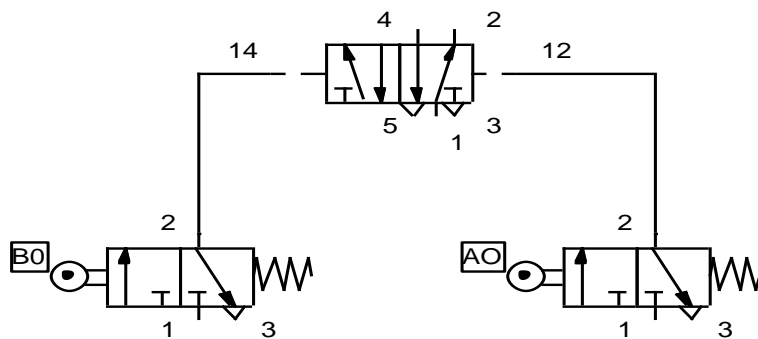# LECTURE 40

MULTI ACTUATOR CIRCUITS

FREQUENTLY ASKED QUESTIONS

1. What is signal lap?
Answer

Signal Overlap can occur when simultaneously two active signals appear on both set and reset pilot ports of Final Control Valve. This is due to the required sequencing of cylinder. At the start, both signals ao and bo appear at the same time. This will not result in any change

2. List four ways to overcome signal overlap or signal conflict
Answer:
To overcome this problem signal elimination techniques are used as listed below:

- Use of Idle return lever limit switches
- Use of N.O Timers
- Use of Cascading with the help of reversing valves
- Use of Stepper Sequencer modules

3. What are reversing valves?
Answer:
Reversing Valves [Double piloted 5/2 way or 4/2 way] .These are signal processing valves which are used to change over from one signal to next signal. Depending on the presence of set or reset signal at the reversing valves, output change over takes place from port 4 to port 2 of the valve. There is no need to examine exact step where signal over lap occur in the circuit
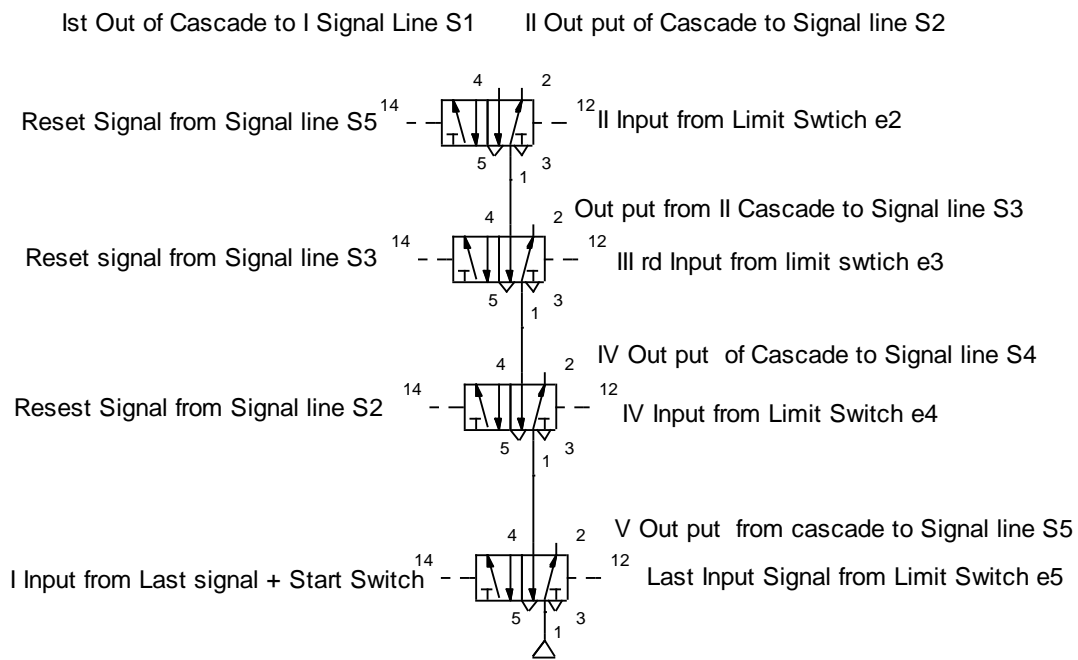
4. List the conditions for cascading
Answer:

Conditions for Cascading are

- Number of signal inputs [from limit switches] must be equal to number of output signals [pilot signals to final control valves]
- Each input signal is assigned to a particular output signal
- It should be possible to store an output signal even when the corresponding input signal is no longer present
- Only one output signal may exist at any one point or it must be possible to eliminate any specific output signal
- The input signal should be effective in the same required sequence
- No. of reversing valves required are (n-1), where n is total number signals from limit switches or signal groups

5. Draw the figure to show the group changing valves for 5 groups showing clearly input, output and reset signal.
Answer

Figure 2