# S3 Pneumatics Homework

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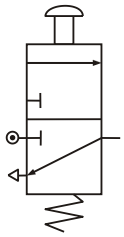
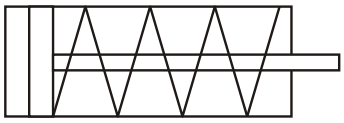
1. Select the correct names for the following pneumatic components:

(a)



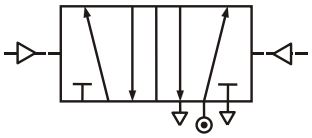
- ☐ pilot air 5/2 valve
- ☐ push button, spring return 3/2 valve
- ☐ shuttle valve
- ☐ spring return 5/2 valve

(b)



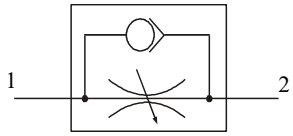
- ☐ double acting cylinder
- ☐ single acting cylinder

(c)



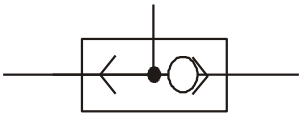
- ☐ shuttle valve
- ☐ push button, spring return 3/2 valve
- ☐ 3/2 valve
- ☐ pilot air, pilot air 5/2 valve

(d)



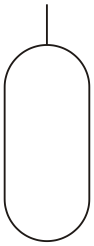

- ☐ restrictor
- ☐ shuttle valve
- ☐ uni-directional restrictor
- ☐ reservoir

(e)



- ☐ shuttle valve
- ☐ ball valve
- ☐ restrictor
- ☐ spring return 5/2 valve

(f)



- ☐ restrictor
- ☐ reservoir
- ☐ shuttle valve
- ☐ double acting cylinder

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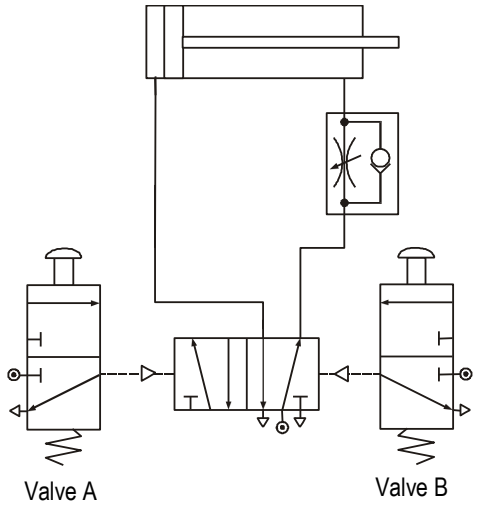
Name .....

2. Using the words below fill in the blanks to describe the operation of the circuit.




*When valve A is pressed pilot air is sent to the _____ of the 5/2 valve causing it to send main air to the left of the cylinder. This causes the cylinder to _____ slowly due to the uni-directional _____ slowing down the air being released at the right of the cylinder.*

*Pressing _____ sends pilot air to the right of the 5/2 valve causing it to send main air to the right of the cylinder. This causes the cylinder to instroke _____.*

___
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| | | |
|---|---|---|
| *quickly* | *valve B* | *restrictor* |
| *cylinder* | *outstroke* | *left* |

3. If the pressure of the air is $4N/mm^2$ and the diameter of the piston is 20mm calculate the **force** produced when the cylinder outstrokes.

$A = \pi r^2$ $F = P \times A$

___
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