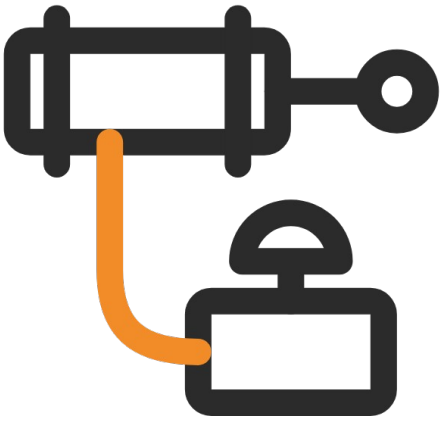
Lesson Pn2 Review Questions

The Single-Acting Cylinder and the 3/2 Valve



Answer every question in your jotter. Show your working. Tap a question below to go to it. Tap **Show answer** under a question to mark it.

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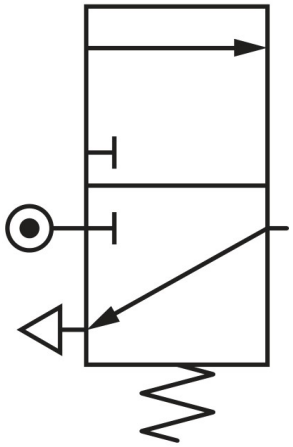
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Questions

2018 Section 1 Question 7

1. Complete the pneumatic symbol shown below for a 3/2 **solenoid** spring return valve. **1**



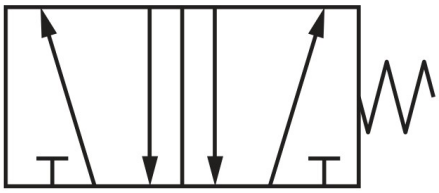
Show answer ›

2014 Section 1 Question 6

2. Complete the pneumatic symbol below by adding:

(a) main air; **1**

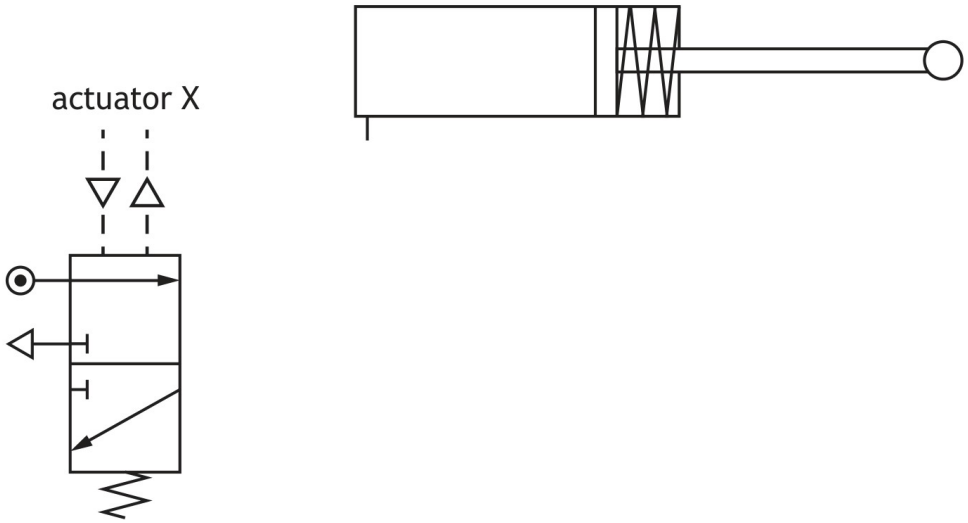
(b) a diaphragm actuator. **1**



Show answer ›

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3. An incomplete pneumatic circuit is shown.



(a) Complete the piping between the valve and cylinder to keep the piston outstroked. **1**

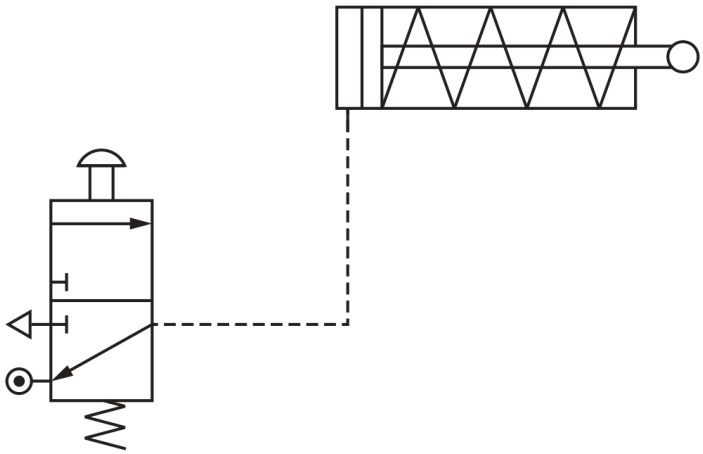
(b) State the name of actuator X. **1**

_____

Show answer ›

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4. A diagram for a pneumatic circuit, designed to outstroke a piston when a push button is pressed on a valve, is shown.



Errors were made in the circuit diagram shown above.

(a) Describe two errors that were made in this circuit diagram. **2**

Error 1 _____

_____

Error 2 _____

_____

Show answer ›

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Answers

Check your understanding (booklet)

1 3 ports and 2 states.

2 The spring.

3 Port 1: main air. Port 2: to the cylinder. Port 3: exhaust.

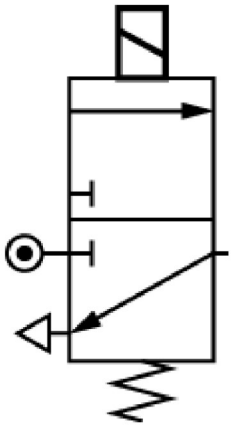
4 A solenoid.

5 The valve is actuated (1). Main air flows to the cylinder, so the piston outstrokes (1).

Answer to question 1

2018 Section 1 Question 7

Marking instructions

Question	Expected response	Max mark	Additional guidance
7.		1	Correct actuator symbol drawn on the top surface of the valve symbol Should include both the rectangle and an inclined line (any direction)

‹ Back to question 1

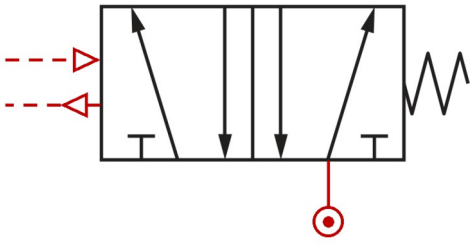
Answer to question 2

2014 Section 1 Question 6

Marking instructions

Question			Expected Answer(s)	Max Mark	Additional Guidance
6.	(a)		main air symbol in correct position (either state)	1	1 mark
	(b)		diaphragm in correct position (both arrows required and pilot line)	1	1 mark

Example answer (what you add is shown in red)



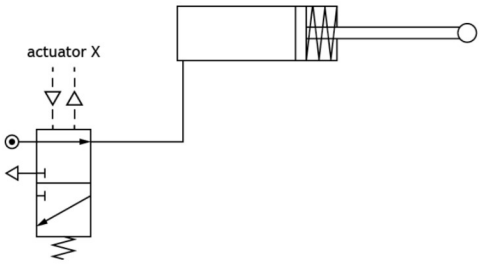
‹ Back to question 2

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Answer to question 3

2021 Section 1 Question 3

Marking instructions

Question			Expected response	Max mark	Additional guidance
3.	(a)			1	1 mark for correct piping port to port.
	(b)		Diaphragm (valve).	1	

‹ Back to question 3

Answer to question 4

2024 Section 1 Question 3 (a)

Marking instructions

Question			Expected response	Max mark	Additional guidance
3.	(a)		Connection of the main air/exhaust is on the incorrect port. (Pilot air) line type to the cylinder should be solid. The piston should be outstroked.	2	1 mark for each error described. 1 mark maximum for main air/ exhaust error. Accept amendments to diagram.

‹ Back to question 4

Sources and credits: past-paper questions and marking instructions © Qualifications Scotland (SQA), reproduced for educational use: Q1 2018 S1 Q7, Q2 2014 S1 Q6, Q3 2021 S1 Q3, Q4 2024 S1 Q3. Example answer: the paper's own figure, completed by R Stewart. For N5 Engineering Science Booklet 6: Pneumatics, Lesson Pn2: The Single-Acting Cylinder and the 3/2 Valve. R Stewart - November 2026.