

11. A pneumatic circuit for a stamping system to press mechanical parts out of a sheet of metal is shown in Figure Q11(a).

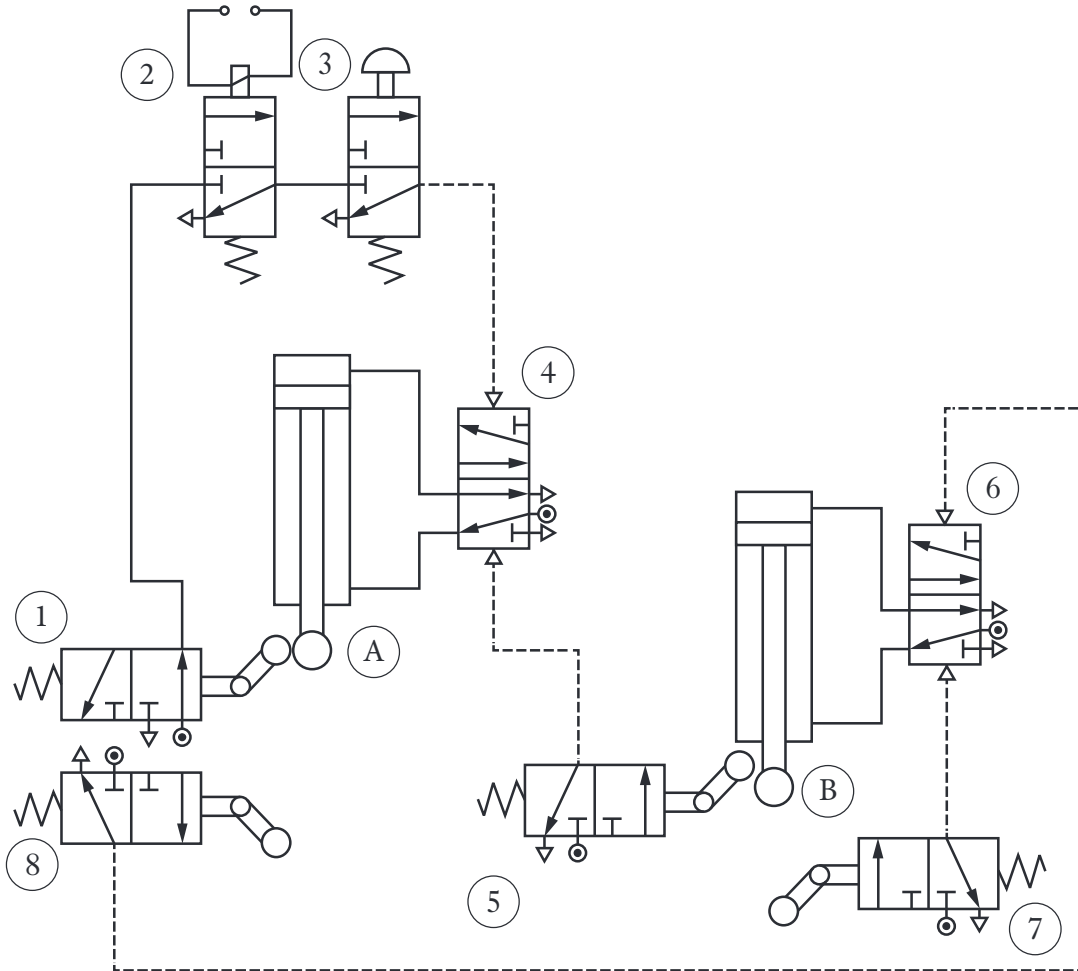


Figure Q11(a)



11. (continued)

(a) (i) State the name of the **actuator** on the following valves.

② _____, spring return

③ _____, spring return

2

(ii) State the type of control created by valves ② and ③.

1

The pneumatic circuit shown in Figure Q11(a) uses sequential control.

(b) Describe what is meant by sequential control.

1

(c) Describe, using appropriate terminology, the operation of the stamping system.

When valve ② is actuated _____

6

[Turn over



* X 0 3 6 1 1 0 1 2 5 *

Marks

4. A pneumatic circuit used to crush material in a recycling system is shown in Figure Q4(a).

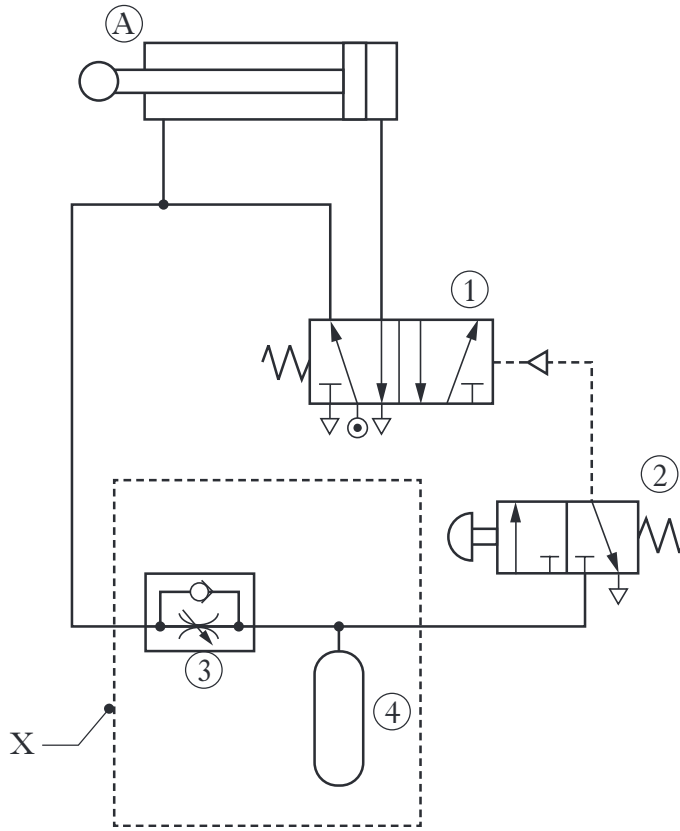


Figure Q4(a)

- (a) State the full name of the following pneumatic components.

① _____

④ _____

2

- (b) Describe the function of components ③ and ④ in sub-system X.

2



Marks

4. (continued)

The cylinder used to crush the material is shown in Figure Q4(b).

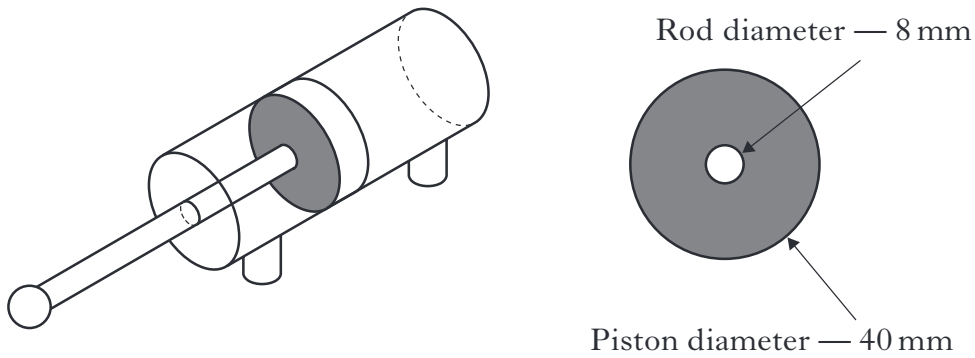


Figure Q4(b)

(c) Calculate:

(i) the effective area of the piston when it **instrokes**.

(ii) the air pressure supplied to the cylinder when the instroking force is 844 N.

3

2
(9)

[Turn over

