

MECHANISM EXAMINATION - QUESTION

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On behalf of The World Association of Technology Teachers

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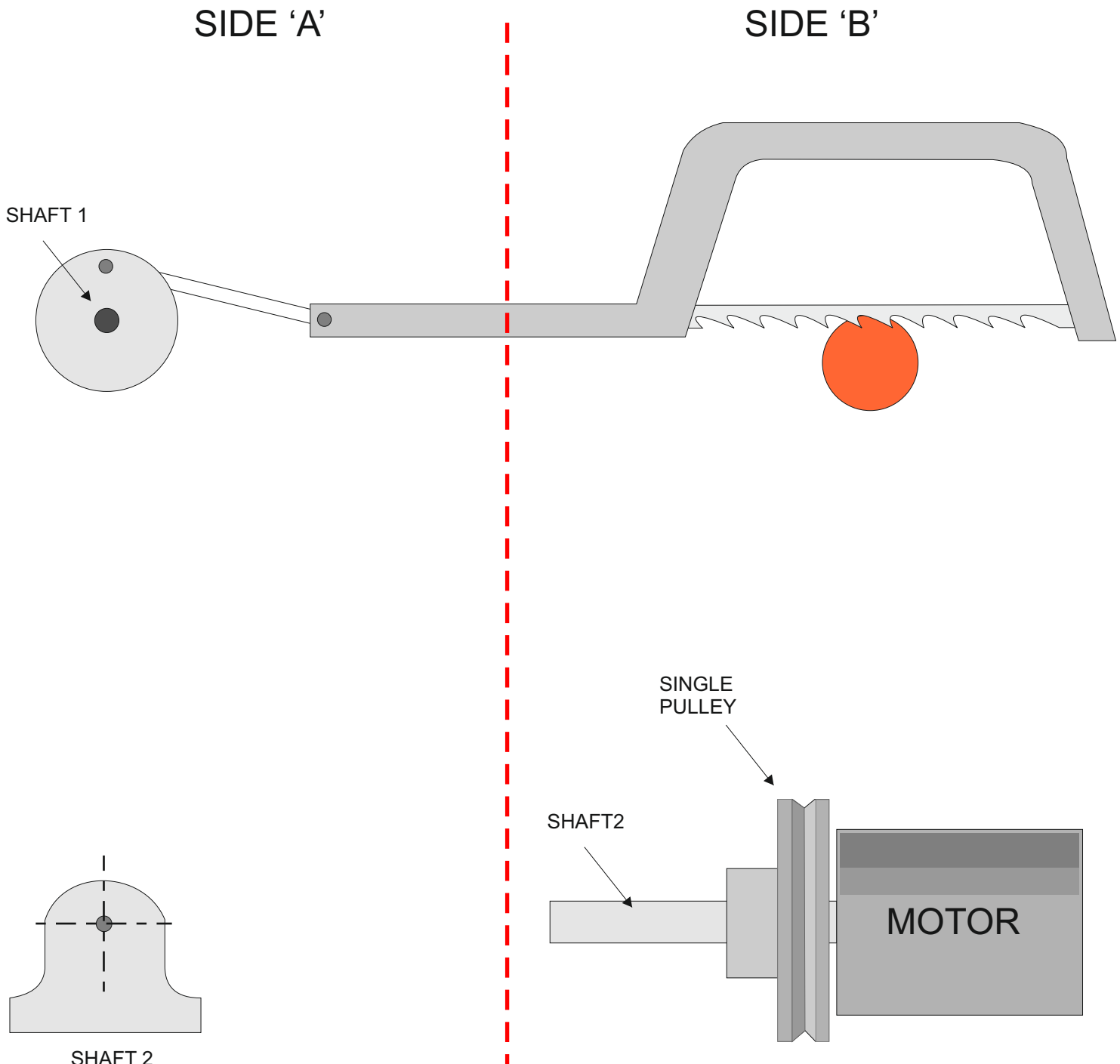
MECHANISM EXAMINATION - QUESTION

Pulley systems are used widely in industry and on production lines. The power hacksaw shown below moves backwards and forwards continuously, cutting metal. A basic drawing of this machine is shown below.

The diagram has been divided into two sides - A and B

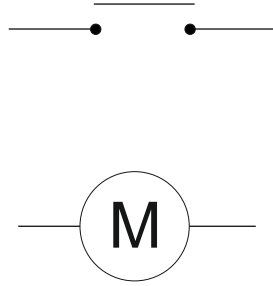
1. On side 'A' add a pulley system that connects shaft 1 and 2 so that two different speeds can be selected. USE NOTES AND SKETCHES

2. On side 'B' show how a single pulley is held securely on to the shaft. USE NOTES AND SKETCHES



2b. Why are different speeds needed for the power hacksaw needed?

3. To make the power hacksaw safe to use to 'push to make' (PTM) switches have been added. The incomplete circuit below shows one of the switches in position. Complete the circuit by adding the second switch.



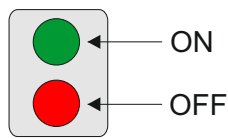
3b. What is the colour of the ON button of any machine? _____

3d. What is the colour of the OFF button of any machine? _____

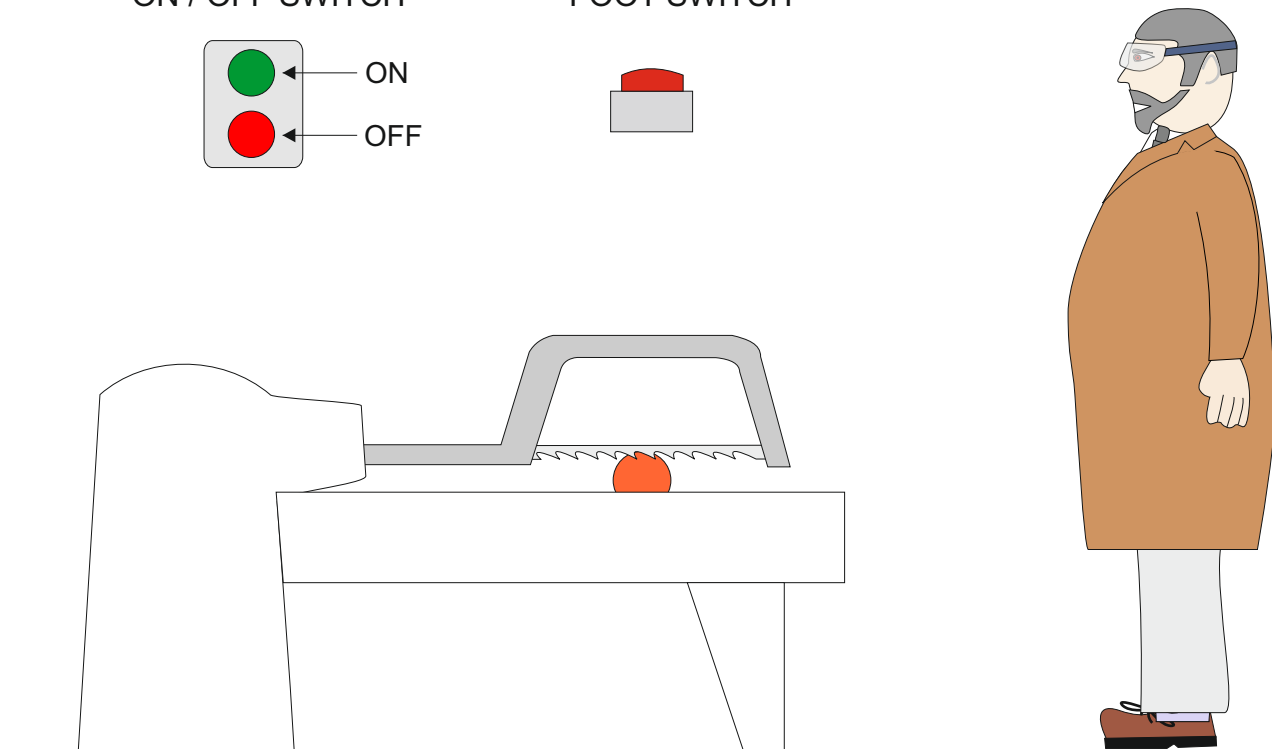
4. Why should the switches be placed at least 500mm apart?

5. The drawing of a new style of power hacksaw needs two types of switches - a foot switch and a normal ON/OFF switch. Draw each switch in its best position on the diagram and explain your reasoning with notes.

ON / OFF SWITCH



FOOT SWITCH



POSITION OF FOOT SWITCH - EXPLANATION:

POSITION OF NORMAL SWITCH - EXPLANATION:
