

# MECHANISM EXAMINATION QUESTION

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On behalf of The World Association of Technology Teachers

## W.A.T.T.



World Association of Technology Teachers

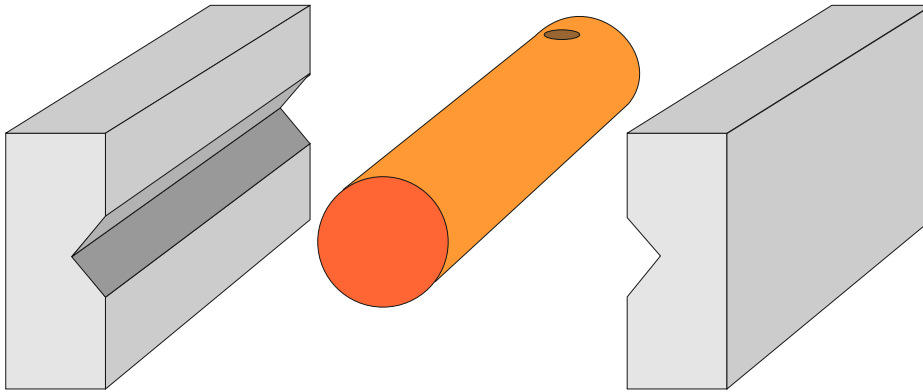
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# MECHANISM EXAMINATION QUESTION

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2. Part of a production process involves a hole being drilled in a piece of round section brass bar. The diagram below shows the bar ready to be held between two jaws leading to for drilling.



2a. In the space below design a mechanism that could be used to clamp both jaws together, holding the bar securely so that it can be safely drilled.

2b. Add labels and notes to explain your design.

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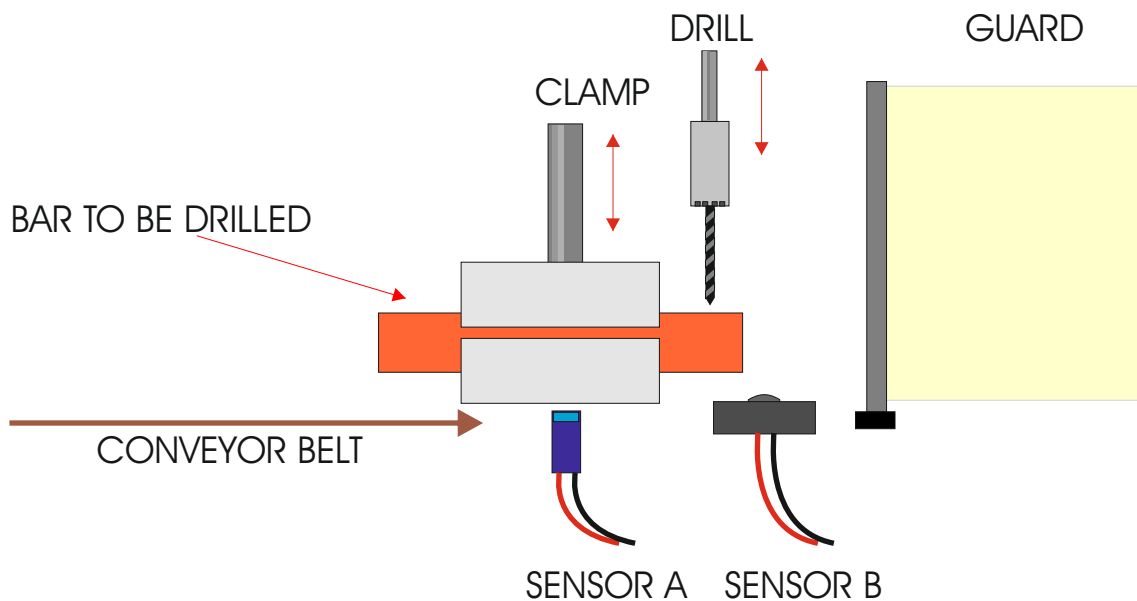
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2c. Name the most suitable material for the manufacture of the jaws. \_\_\_\_\_

2d. Why is the material you have named the most suitable?  
\_\_\_\_\_  
\_\_\_\_\_

3. In order to increase the speed of the production line an automatic clamping device has been included. When the bar is to be drilled it is clamped automatically in the right position. A PIC Microcontroller monitors inputs to control the automatic system.

A dark sensor (sensor A) detects when the brass bar is in the correct position and a micro-switch (Sensor B) detects when the guard is in position. When both switches are activated the clamping mechanism works.



3a. In the space below draw the systems diagram that represents INPUT - PROCESS - OUTPUT for the operation of the production line shown above.

INPUT

PROCESS

OUTPUT

