

## THE JUNIOR HACKSAW AND ENGINEERS VICE

TO ANSWER ALL THE QUESTIONS YOU WILL NEED TO DOWNLOAD THE 'WORKING WITH METALS - PART THREE' APP, FROM THE INTERACTIVE MOBILE APP SECTION OF [www.technologystudent.com](http://www.technologystudent.com)

**LINK**

[http://www.technologystudent.com/mobapps/engineering\\_equipment2.pdf](http://www.technologystudent.com/mobapps/engineering_equipment2.pdf)

Once you have downloaded the App, you can use it to navigate the website. You may need to follow the links on each page of the App, to research / complete answers to all the questions.

**ARE YOU READY?  
USE THE MOBILE App!!**

**1** DESCRIBE THE GENERAL USE OF A JUNIOR HACKSAW.

Two sample junior hacksaws are seen opposite.

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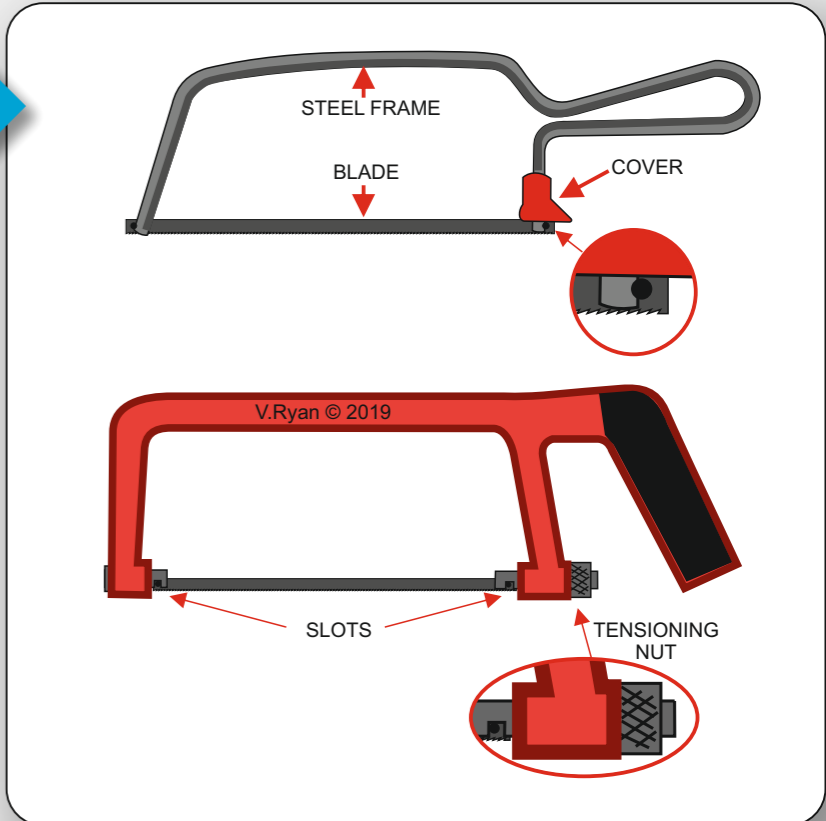
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**2** DESCRIBE THE MAIN FEATURES OF THE ENGINEERS VICE.

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**3** WHAT ARE 'FIBRE GRIPS' AND WHY ARE THEY SOMETIMES ADDED TO THE JAWS OF THE ENGINEERS VICE?

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**4** IN THE SPACE BELOW, SKETCH ONE TYPICAL USE OF A JUNIOR HACKSAW.

HELPFUL LINK: [http://www.technologystudent.com/mobapps/engineering\\_equipment2.pdf](http://www.technologystudent.com/mobapps/engineering_equipment2.pdf)

### LEG VICE AND TAPS FOR INTERNAL THREADS

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**1** DESCRIBE A LEG VICE AND INCLUDE AN EXPLANATION OF ITS USE.

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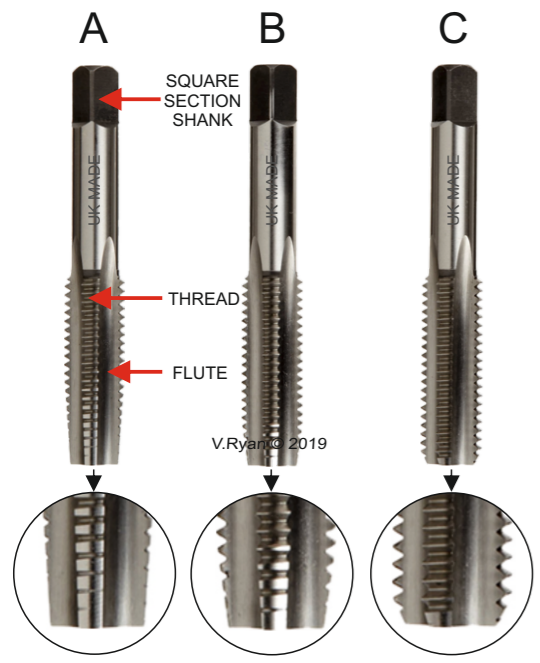
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COMPLETE THE DIAGRAM OF THE LEG VICE AND ADD LABELS.

**2** TAPS ARE USED TO CUT INTERNAL THREADS. NAME THE THREE TAPS (A,B andC)



A: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 B: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 C: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**3** EXPLAIN HOW AN INTERNAL M6 METRIC THREAD IS PRODUCED.

Support your explanation with a sketch(s) in the next box

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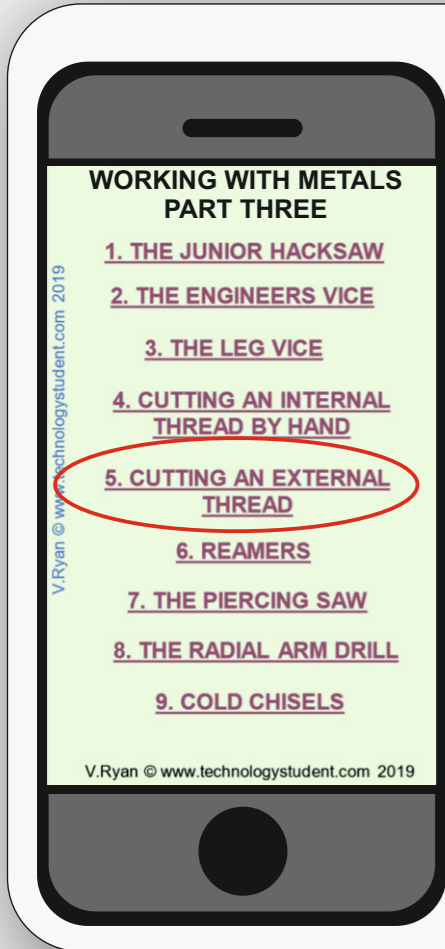
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YOUR SKETCH(S)

HELPFUL LINK: [http://www.technologystudent.com/mobapps/engineering\\_equipment2.pdf](http://www.technologystudent.com/mobapps/engineering_equipment2.pdf)



## DIES AND EXTERNAL THREADS

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**ARE YOU READY?  
USE THE MOBILE App!!**

1

DESCRIBE A CIRCULAR SPLIT DIE AND EXPLAIN ITS ROLE IN CUTTING AN EXTERNAL THREAD.

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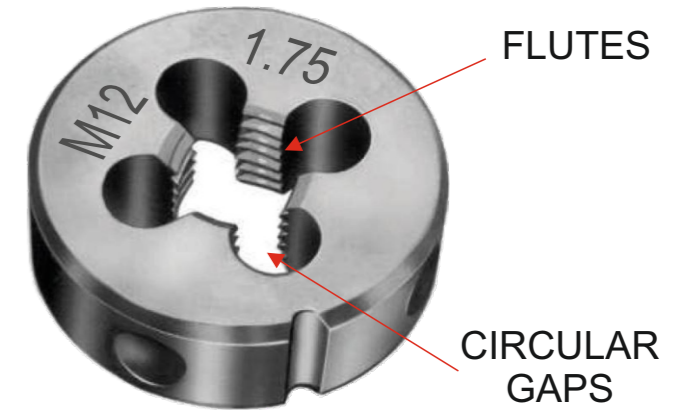
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### CIRCULAR SPLIT DIE.



2

IN THE SPACE BELOW, SKETCH A DIE AND DIE HOLDER / STOCK.  
Indicate the adjusting screws.

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3

EXPLAIN HOW AN EXTERNAL, M8 METRIC THREAD IS PRODUCED.

Support your explanation with a sketch(s) in the next box

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### YOUR SKETCH(S)

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HELPFUL LINK: [http://www.technologystudent.com/mobapps/engineering\\_equipment2.pdf](http://www.technologystudent.com/mobapps/engineering_equipment2.pdf)

## REAMERS



TO ANSWER ALL THE QUESTIONS YOU WILL NEED TO DOWNLOAD THE 'WORKING WITH METALS - PART THREE' APP, FROM THE INTERACTIVE MOBILE APP SECTION OF [www.technologystudent.com](http://www.technologystudent.com)

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**ARE YOU READY?  
USE THE MOBILE App!!**

**1** AFTER DRILLING A HOLE, WHAT IS THE GENERAL PURPOSE OF A REAMER?

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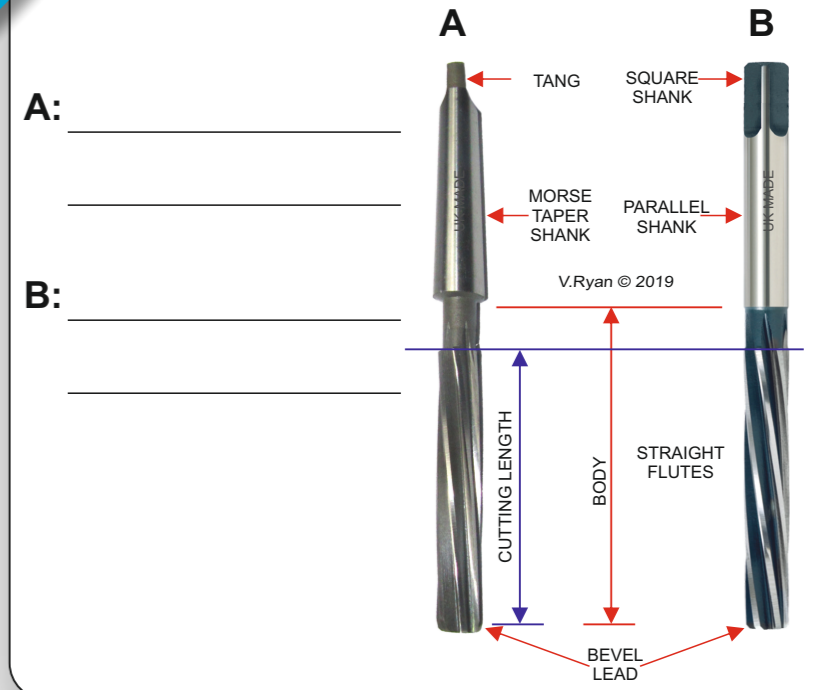
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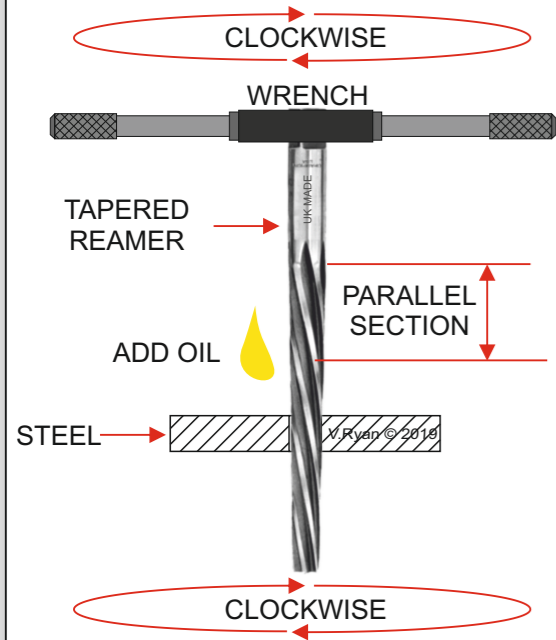
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IDENTIFY THE 'HAND' AND 'MACHINE' REAMER.



**2** DESCRIBE THE USE OF A HAND REAMER.  
You can use the diagram for reference.




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**3** EXPLAIN WHEN AND HOW, A 'MACHINE REAMER' IS USED, AFTER DRILLING A HOLE ON A CENTRE LATHE.

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**4** DESCRIBE ONE USE OF A TAPERED REAMER.

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**WORKING WITH METALS  
PART THREE**

1. THE JUNIOR HACKSAW
2. THE ENGINEERS VICE
3. THE LEG VICE
4. CUTTING AN INTERNAL THREAD BY HAND
5. CUTTING AN EXTERNAL THREAD
6. REAMERS
7. THE PIERCING SAW
8. THE RADIAL ARM DRILL
9. COLD CHISELS

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**THE PIERCING SAW, RADIAL ARM DRILL AND COLD CHISEL**

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**ARE YOU READY?  
USE THE MOBILE App!!**

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**WHEN WOULD YOU USE A PIERCING SAW?**

Support your answer with a sketch in the next box.

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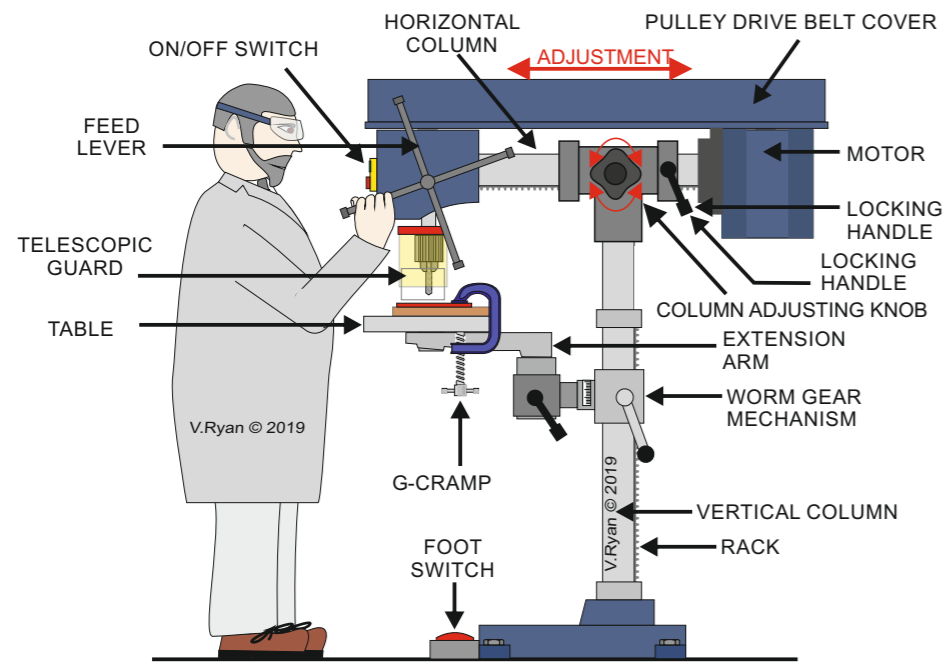
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**YOUR SKETCH.**

2

**HOW DOES A RADIAL ARM DRILL, DIFFER FROM A TYPICAL MACHINE / PILLAR DRILL?** Write your answer in the next box.



**YOUR ANSWER  
THE RADIAL ARM DRILL.**

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3

**SKETCH ONE PRACTICAL USE OF A FLAT COLD CHISEL.**

**HELPFUL LINK:** [http://www.technologystudent.com/mobapps/engineering\\_equipment2.pdf](http://www.technologystudent.com/mobapps/engineering_equipment2.pdf)