

# Manufacturing Questions

- 4 (b) In the table below, complete the Production Plan listing five major operations needed to complete the body of the High Carbon Steel Maintenance Tool in **Figure 6** on page 12 shown to the required specification. Some parts have been done for you. Select the others from the list given beneath the table and insert the identification letter in the appropriate box.

Order	Operation	Tools and Equipment	Description of task carried out
1	Cut out the blank for the tool	Stamping press and die	
2	De-burr the blank	Angle grinder fitted with a flexible abrasive flap wheel	
3	Hardening		Heat hooked end of tool until red hot and quench
4	De-scaling		Remove layer of oxide formed by heating and create a shiny surface
5	Tempering	Controllable heat source	

(5 marks)

Use the information below to complete the Production Plan. Use the letter only.

Rough edges produced during forming are removed **A**

Heat hooked end to a specific temperature and quench **B**

Outline of tool and required hole created in one action **C**

Gas/air or oxy-acetylene torch and water bath **D**

file **E**  
emery cloth  
polishing wheel

## Answers

4	b		<b>Order</b>	<b>Operation</b>	<b>Tools and Equipment</b>	<b>Description of task carried out</b>	5	The code letter or the written descriptor are equally acceptable answers.
		1	Cut out the blank for the tool.	Stamping press and die.	Outline of tool and required hole cut out in one action. <b>C</b>			
		2	De-burr the blank	Angle grinder fitted with a flexible abrasive flap wheel.	Rough edges produced during forming are removed. <b>A</b>			
		3	Hardening	Gas / air or oxy-acetylene torch & water bath. <b>D</b>	Heat hooked end of tool until red, hot and quench.			
		4	De-scaling	File emery cloth polishing wheel. <b>E</b>	Remove layer of oxide formed by heating and create a shiny surface.			
		5	Tempering	A controllable heat Source.	Heat hooked end to a specific temperature and quench. <b>B</b>			