

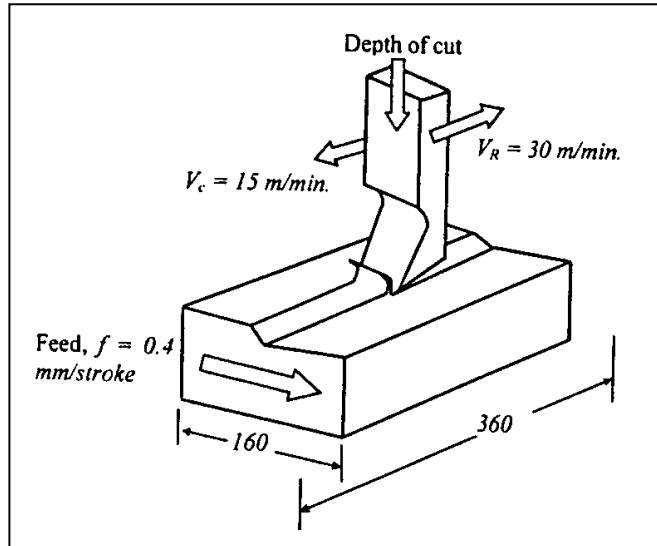
CHAPTER 7

SHAPING

Question

1. Explain why shaper tools are of stronger section than lathe tools.
2. With a neat diagram show the basic movements possessed by a simple shaping machine.
3. Explain why the return stroke of a shaping-machine ram is made to take place in less time than the cutting stroke.
4. What is the purpose of the head slide of a shaping machine?
5. Make a simple outline diagram of a shaping machine, clearly indicating the following features: (i) ram, (ii) head slide, and (iii) tool-holder and clapper box.
6. Explain why provision must exist on a shaping machine for adjustment of the following: (i) length of stroke, (ii) position of ram.
7. What is the purpose of a clapper box on a shaping machine?
8. Make neat sketches to illustrate the need for indexing the head slide at 45° together with tilting the clapper box when shaping the V block.
9. Which movements determine the capacity of shaping machine?
10. List the precautions that should be observed when holding the workpiece in the vice.
11. Why the overhanging tool length should be kept a minimum?
12. Why the protruding length of workpiece should be kept minimum.
13. Find the number of double strokes per minute at which the shaper should be run to machine a steel workpiece having a cutting speed of 20 m/min. Given that length of 170 mm and the cutting stroke angle = 225° .
14. Calculate the cutting time for shaping steel workpiece has 240 mm width. Given that: feed = 0.5 mm/stroke, average cutting speed = 15 m/min., return speed is twice cutting speed, stroke length = 365 mm.
15. Calculate the cutting time for shaping steel workpiece has 160 mm width. Given that: feed = 0.4 mm/stroke, average cutting speed = 15 m/min., return speed is twice (2) cutting speed, stroke length = 360 mm. (Fig. 7.12)

Fig. 7.12 Shaping steel W.P.



16. Comment on the set-up shown at Fig. 7.13, listing any faults in work or tool setting.

Fig. 7.13 Setup.

