Unit 44: Manufacturing Secondary Machining Processes

Level: 3

Unit type: Optional

Guided learning hours: 60

Unit in brief

This unit covers how machining processes can be used to manufacture complicated shapes by the removal (cutting) of material. This will involve the set-up and use of secondary processing machines to manufacture a component.

Unit introduction

Many of the products and components we use daily would not be available without secondary machining processes. The use of these processes to manufacture a product or component is sometimes easy to spot, like a machine bearing or the nut holding in place a brake shoe on a bicycle. For other products or components, like curtains, it is less easy to spot. This is because you need to first think about how the curtains have been manufactured. Hence, the curtains are manufactured using machines containing components that have been subjected to secondary machining processes.

As a future engineer you will need to understand and acquire practical skills in a range of machining processes. The knowledge and practical skills are required to enable engineers to design feasible solutions to engineering problems. For example, a feasible solution is one that can be manufactured using secondary machining processes. This unit will prepare learners well for a mechanical or manufacturing engineering apprenticeship or degree course and for technician level role as a machine setter and setter-operators.

In this unit you will cover the technology and characteristics of a range of traditional, such as turning, and specialist, such as broaching, machining processes. You will develop health and safety skills required to work on secondary machining processes and gain practical skills and understanding to set-up and operate traditional secondary machining processes to manufacture a component. Finally learners will reflect on their skills and understanding applied to and behaviours whilst manufacturing a prototype component.

Learning aims

The aims of this unit are to:

AUnderstand the technology and characteristics of secondary machining processes that are widely used in industry.

BSet-up traditional secondary processing machines safely to manufacture a component.

CCarry out traditional secondary machining processes to safely manufacture a component.

DReview the processes used to machine a component and reflect on own performance.