



## Surface grinding

Surface grinding is a widely used process of machining in which a spinning wheel covered in rough particles cuts chips of metallic or non metallic substance making them flat or smooth. Lubricants are sometimes used to cool the workpiece and wheel, lubricate the interface, and remove swarf.<sup>1</sup> The lubricant must be applied directly to the cutting area to ensure that the fluid is not carried away by the grinding wheel. Common lubricants include water-soluble chemical fluids, water soluble oils, synthetic oils, and petroleum-based oils. The type of lubrication used depends on the workpiece material. The following are the most common types of lubricants used in surface grinding.

Workpiece Material	Lubricant
Aluminium	Light duty oil
Brass	Light duty oil
Cast iron	Heavy duty emulsifiable oil, light duty chemical and synthetic oil
Mild steel	Heavy duty water-soluble oil
Stainless steel	Heavy duty emulsifiable oil, heavy duty chemical and synthetic oil
Plastics	Water-soluble oil, dry, heavy duty emulsifiable oil, light duty chemical and synthetic oil

### GLOSSARY

**1** fine metallic filings or shavings removed by a cutting tool.



### ACTIVITIES

**1** Answer the following questions.

- 1 What is surface grinding?
- 2 Why are lubricants used in surface grinding?
- 3 What are the most common types of lubricants used in surface grinding?