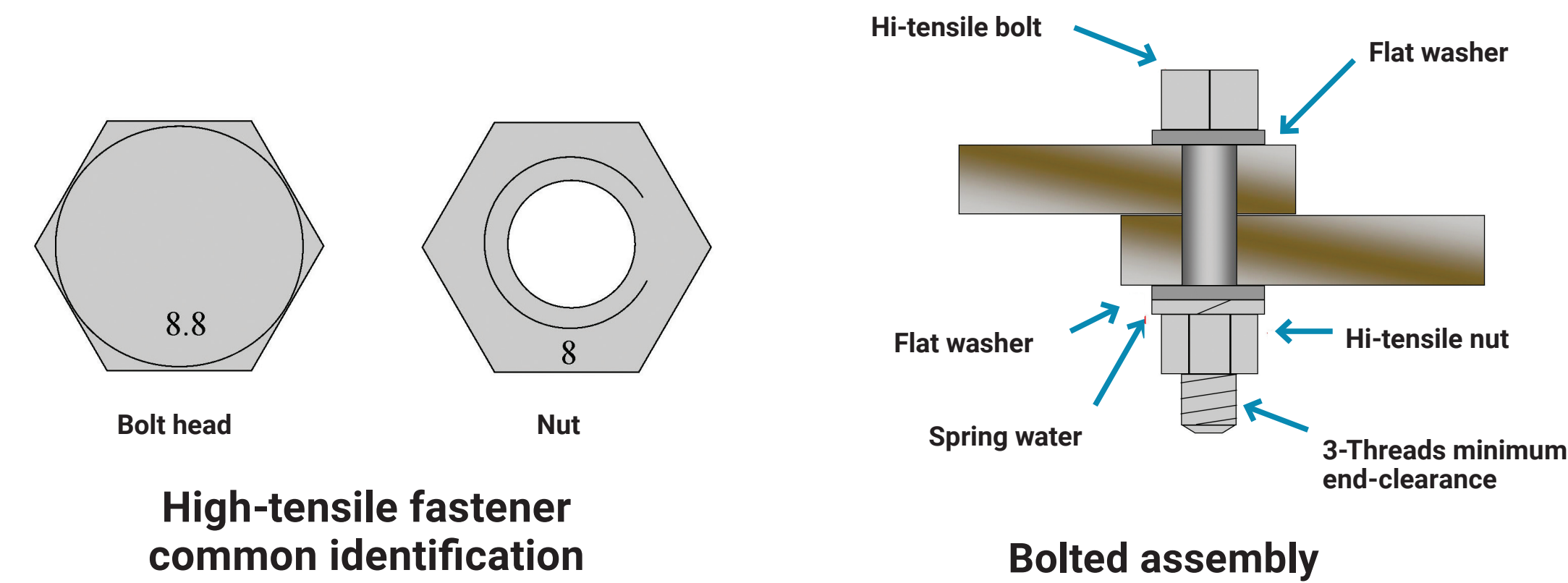


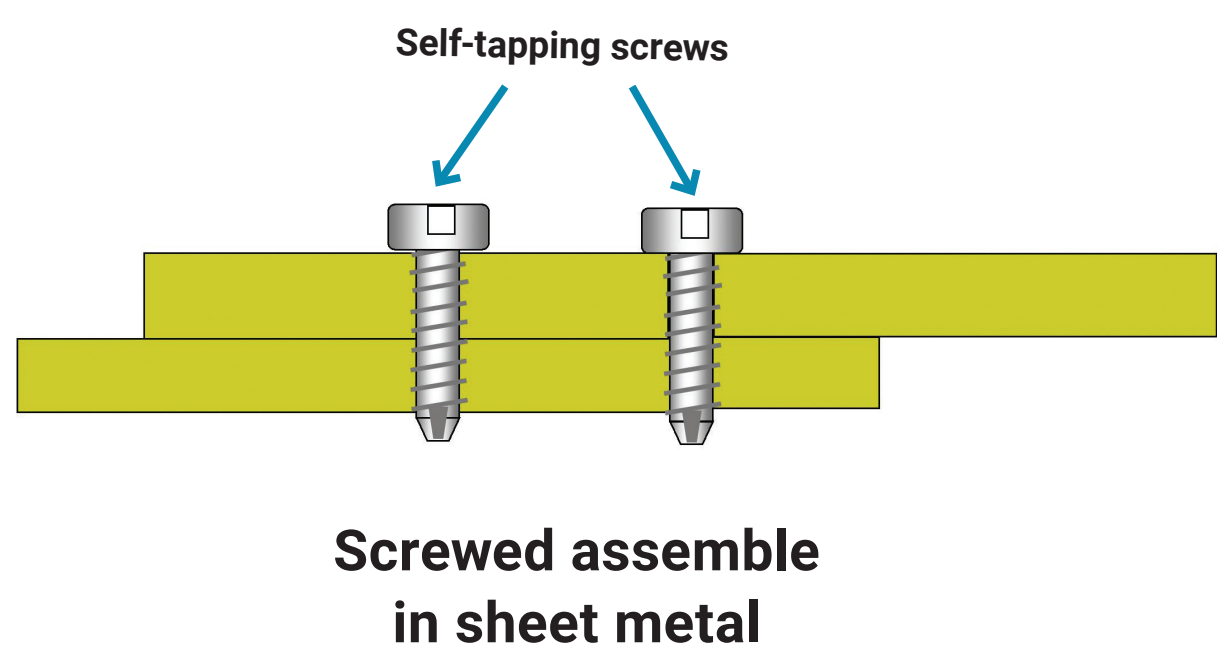


# Engineering fastener



8.8 Fastener specifications			
Bolt size	Tapping drill size (mm)	Clearance hole size (mm)	Torque N-M (Min – Max)
M5	Ø 4.2	Ø5.3 – 5.8	7 NM
M5	Ø 5.0	Ø6.4 – 7.0	12 NM
M8	Ø 6.8	Ø6.4 – 10.0	30 NM
M10	Ø 8.5	Ø10.5 – 12.0	55 NM

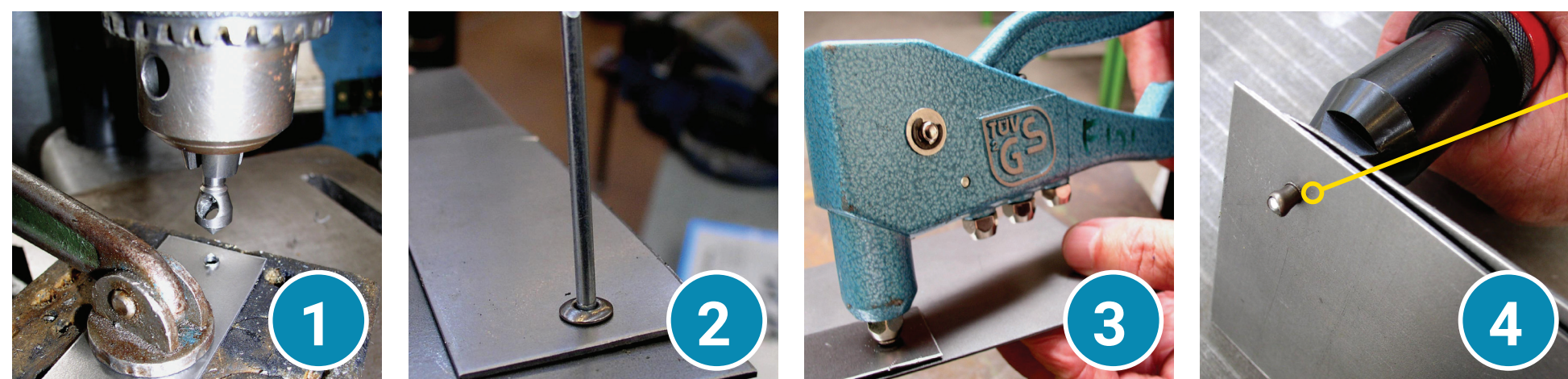
Self-tapping screw specifications		
Screw size	Metal thickness (mm)	Hole size (mm)
2.9	0.38 – 1.90	Ø2.18 – 2.26
3.5	0.38 – 1.90	Ø2.64 – 2.79
4.2	0.46 – 1.90	Ø2.95 – 3.56
4.8	0.46 – 1.90	Ø3.66 – 3.73
5.5	0.46 – 1.90	Ø4.09 – 4.39
6.3	0.46 – 1.90	Ø5.05 – 5.11



# Riveting

Riveting is a method of cold joining sheet and plate material. It is used as an alternative to welding, brazing or bolting.

There are two main methods; Solid riveting dating back to the bronze age and Pop-riveting widely used after the 1940's.

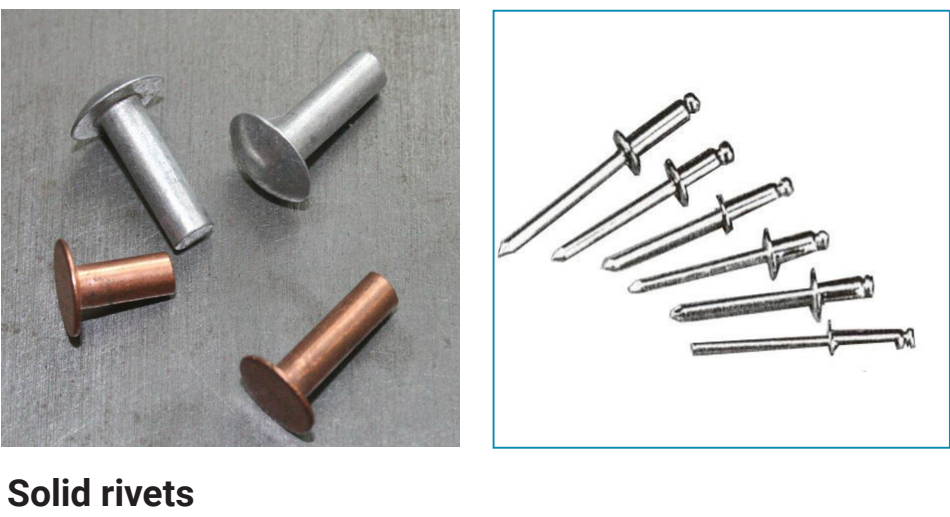


**Smart tip!**  
A rivet should stick out the other side a distance of 1½ times it's diameter.

## Blind riveting (also known as Pop-riveting)

Gauge the two materials to be jointed and choose the correct drill size for the rivets.

- 1 Centre punch the material in the correct positions, drill and debur.
- 2 Insert rivet and ensure the two materials are in close contact before joining.
- 3 Place the riveting hand tool on the pin of the rivet.
- 4 Squeeze the handle a few times until the pin 'pops' off the rivet.

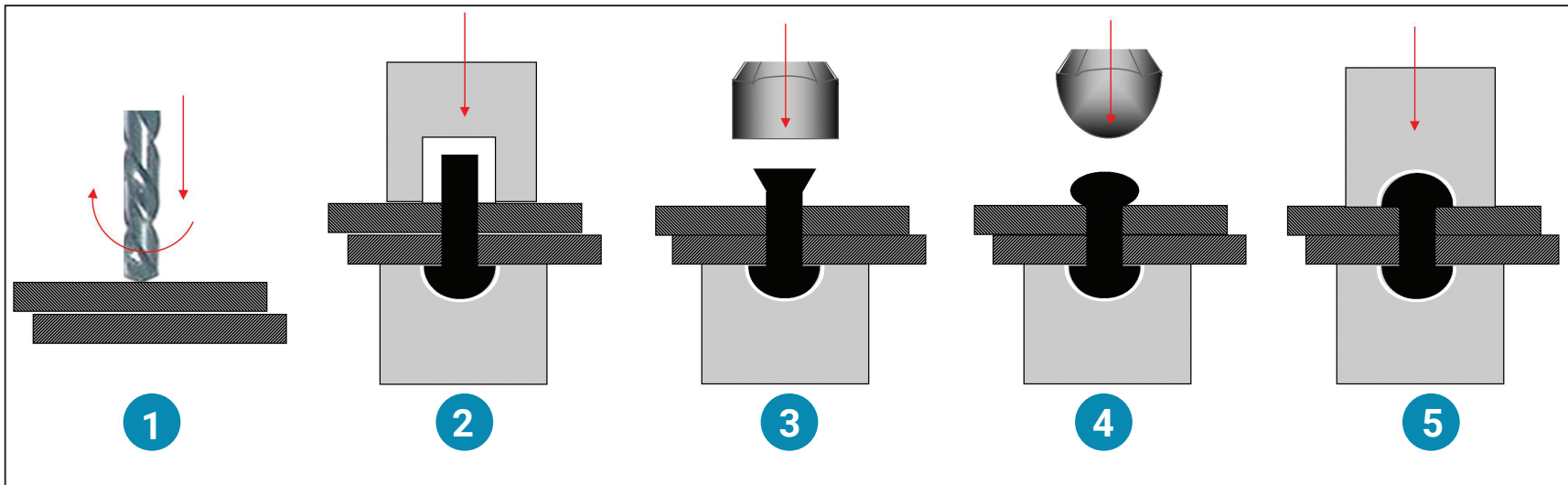


Solid rivets

**WARNING**  
Always wear safety glasses and keep your fingers clear.

## Solid riveting

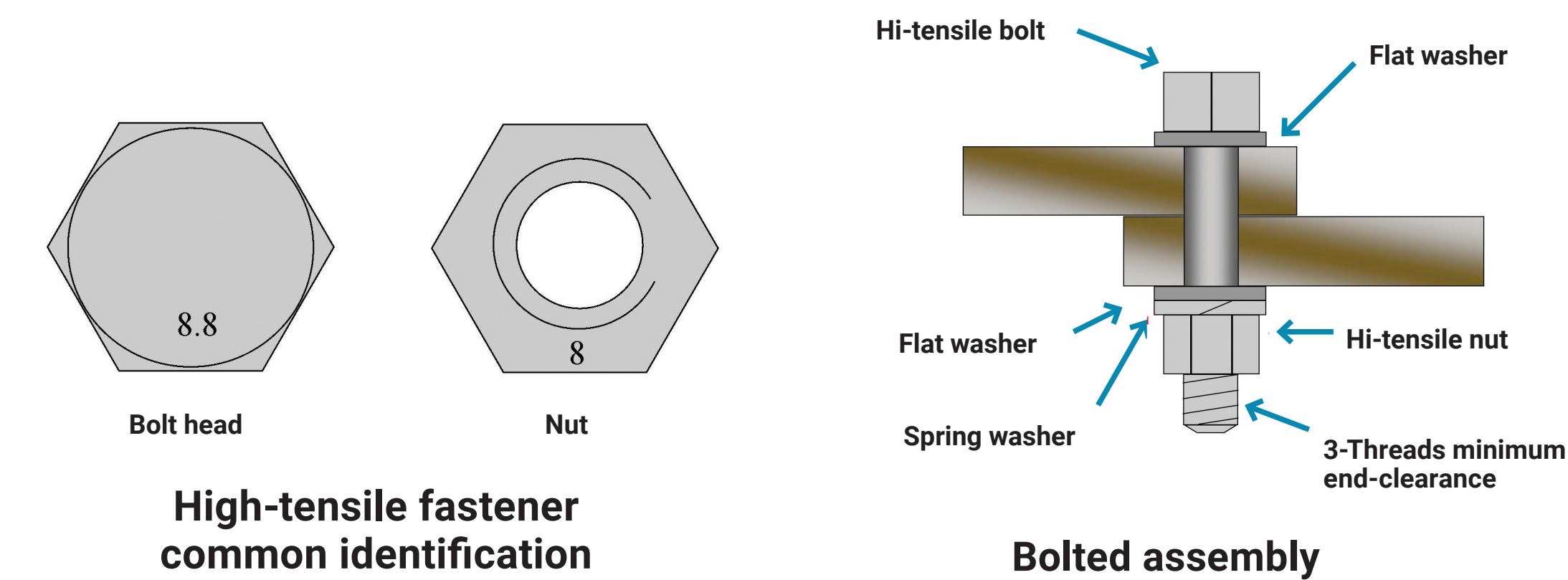
- Gauge the two materials to be jointed and use selection tables to choose the correct drill size for the rivets.
- 1 Centre punch the material, drill and debur, ensure the two materials are in close contact before joining.
  - 2 Insert rivet and using the combined 'set and snap', set the rivet and plates together.
  - 3 Swell the shank of the rivet with a flat faced engineers hammer.
  - 4 Mushroom the 'tail' to start to form the head using a ball-pein engineers hammer.
  - 5 Create a perfect round head with the 'snap' of the combo tool.





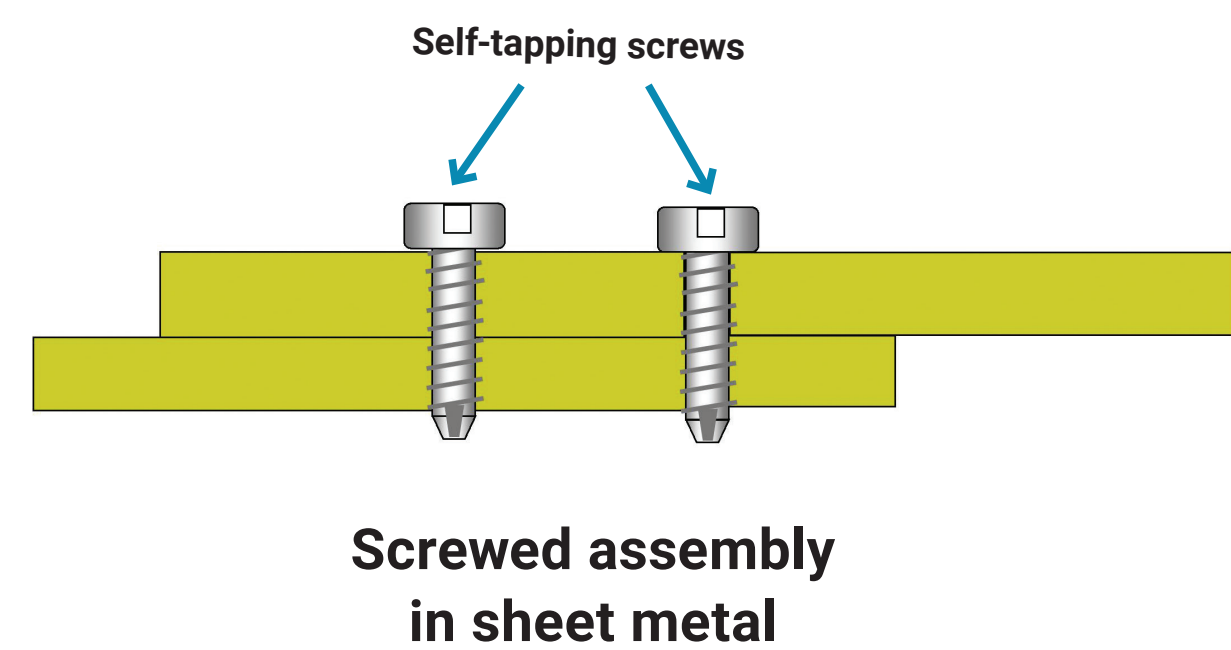
Engineering fastener

Taputapu whakarawa



8.8 Fastener specifications			
Bolt size	Tapping drill size (mm)	Clearance hole size (mm)	Torque N-M (Min – Max)
M5	Ø 4.2	Ø5.3 – 5.8	7 NM
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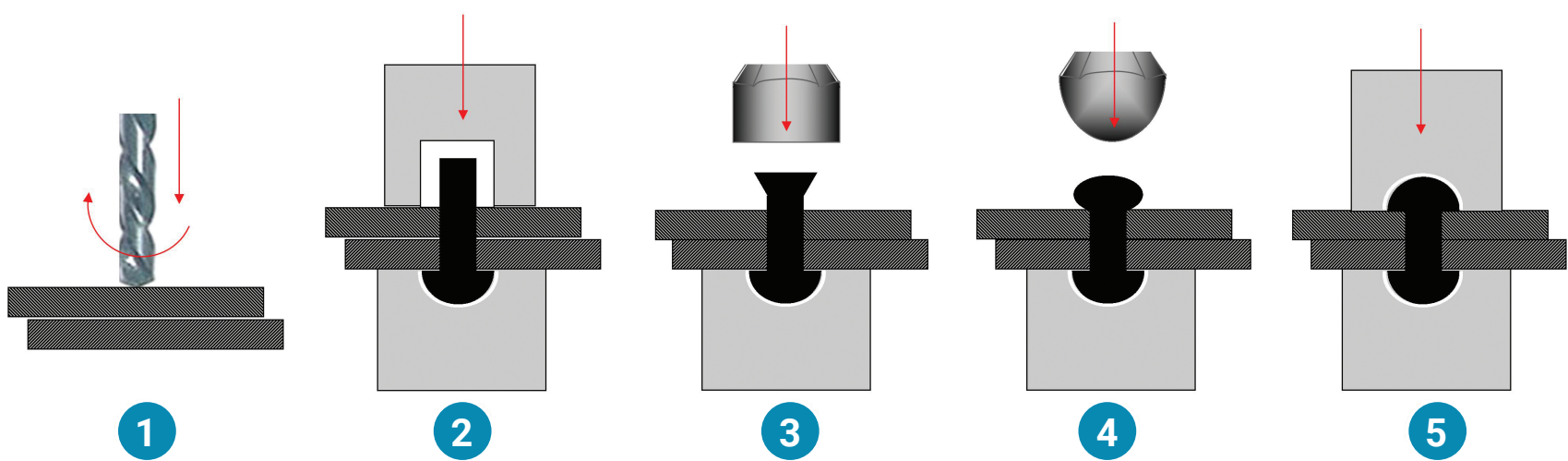
Riveting

Te mahi rīwiti

Riveting is a method of cold jointing sheet and plate material. It is used as an alternative to welding, brazing or bolting.

There are two main methods; Solid riveting (dating back to the bronze age) and Pop-riveting (widely used after the 1940's).

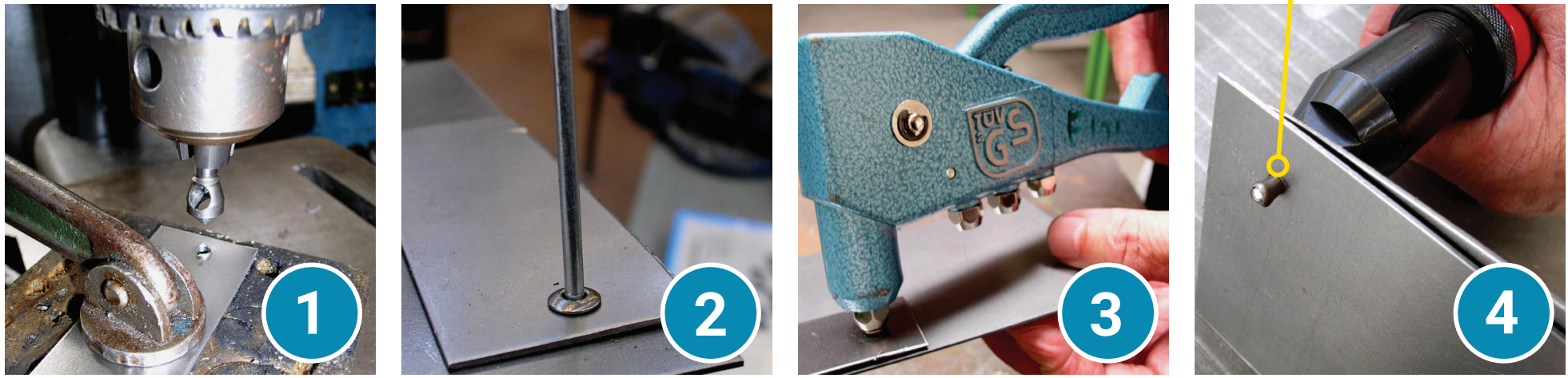
**Smart tip**  
A rivet should stick out the other side a distance of 1½ times it's diameter.



Solid riveting

Gauge the two materials to be jointed and use selection tables to choose the correct drill size for the rivets.

- 1
- Centre punch the material, drill and debur, ensure the two materials are in close contact before jointing.
- 2
- Insert rivet and using the combined 'set and snap', set the rivet and plates together.
- 3
- Swell the shank of the rivet with a flat faced engineers hammer.
- 4
- Mushroom the 'tail' to start to form the head using a ball-pein engineer's hammer.
- 5
- Create a perfect round head with the 'snap' of the combo tool.



Pop riveting  
(also known as Blind-riveting)

Gauge the two materials to be jointed and choose the correct drill size for the rivets.

- 1
- Centre punch the material in the correct positions, drill and debur.
- 2
- Insert rivet and ensure the two materials are in close contact before jointing.
- 3
- Place the riveting hand tool on the pin of the rivet.
- 4
- Squeeze the handle a few times until the pin 'pops' off the rivet.



Solid rivets



WARNING KIA TŪPATO

Always wear safety glasses and keep your fingers clear.  
Me whakamau mōhiti haumaru i ngā wā katoa, kia wātea tonu ō matimati.