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# Document Release History

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<tr>
<td>14/11/06</td>
<td>First draft</td>
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<td>09/04/14</td>
<td>2.0</td>
<td>SOLAS transfer</td>
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Module 4 – General Sheet Metalwork

Unit 5 – Saddle Piece

Duration – 7 Hours

Learning Outcome:
By the end of this unit each apprentice will be able to:

- Organise production sequence unassisted
- Read and interpret drawing for Saddle Piece
- Calculate perimeter of saddle piece, material required, production sequence
- Produce a pattern directly onto metal
- Cut, deburr, fold and assemble Saddle-Piece with corner lap joint
- Assemble Saddle-Piece to duct by ‘pop’ riveting and tabbed joint

Key Learning Points:

<table>
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<th>D</th>
<th>Drawing and development of Saddle-Piece and hole of penetration.</th>
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<td>Rk</td>
<td>Blind rivets, types, principle of operation.</td>
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Training Resources:

- Toolkit
- 0.6mm galvanised mild steel
- Job card
- Tools and machinery/equipment
- Work sample
- Safety equipment and protective clothing

Key Learning Points Code:

- M = Maths
- D = Drawing
- Rk = Related Knowledge
- Sc = Science
- P = Personal Skills
- Sk = Skill
- H = Hazards
Pop Riveting

Pop rivets, unlike solid rivets, are tubular and are much lighter in weight. They are manufactured from either aluminium alloy for lightness or nickel for additional strength and corrosion resistance. They were originally designed for one-sided riveting, by which rivets can be set in places otherwise inaccessible. One operator is needed, the rivets being set or clinched with the aid of special hand-held 'lazy tongs' or pliers. Although their main application has been in aircraft construction and motor vehicle body building, where it is necessary to join thin material to thicker supporting members and lightness is important, they are often used in place of solid rivets for general riveting. They are available in diameters 2.4 mm, 3.2 mm, 4 mm and 4.8 mm for joining thicknesses up to 12.7 mm.

A skilled operator may achieve speeds of 20 rivets per minute.
Self Assessment

Questions on Background Notes – Module 4.Unit 5

1. How are pop rivets unlike solid rivets?

2. Where are the main applications of pop rivets?

3. What diameter are pop rivets available in.
Answers to Questions 1-3. Module 4.Unit 5

1.

Pop Rivets:

They are tubular and much lighter in weight.

2.

Aircraft and motor vehicle body building.

3.

Diameters available: 2.4mm, 3.2mm, 4mm and 4.8mm
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