## Welding

## Table

Design
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## Equipment you need

- MIG or ARC Welder
- Tape Measure
- Metal Scribe
- A Metal Square
- Angle Grinder
- Grinding Discs
- Flap Wheel (80 Grit)
- Preparation Wheel (Available from Screwfix)
- Degreaser
- A long sash clamp
- G-clamps x2


## Material to Order

| Material to Order | Dimension | Length <br> (Rounded up) |
| :---: | :---: | :---: |
| Mild Steel Box Section | $40 \times 40 \times 3 \mathrm{~mm}$ | $9000 \mathrm{~mm}(9 \mathrm{~meters})$ |
| Mild Steel Flat Bar | $40 \times 5 \mathrm{~mm}$ | $7000 \mathrm{~mm}(7$ metres $)$ |

## Metal Suppliers

| Plymouth | Austen Knapman | www.austenknapman.co.uk |
| :---: | :---: | :---: |
| Other | Metals 4 U | $\underline{\text { www.metals4u.co.uk }}$ |

## Cutting List

| Material | Length (mm) | Number Required | Total Length (mm) |
| :---: | :---: | :---: | :---: |
| $40 \times 40 \times 3 \mathrm{~mm}$ <br> Square Box Section | 900 | $\times 4$ |  |
| $40 \times 40 \times 3 \mathrm{~mm}$ <br> Square Box Section | 600 | $\times 8$ | $8400(8.4 \mathrm{~m})$ |
| $40 \times 5 \mathrm{~mm}$ Flat Bar | 680 | $\times 9$ | 6120 |

## Stage 1. Prepare the material

1. Cut all lengths of steel from Cut list
2. Use a Preparation Wheel to remove the mill scale from the areas to be joined
3. Degrease Steel lengths

## Stage 2

1. Offer up the parts of the table
2. Spot Weld the Parts together


## Stage 3

1. Repeat this process for the other side.
2. Spot weld the other section.


## Stage 4

1. Check the diagonal dimensions
2. Equal dimensions mean the frame is square
3. If unequal use the sash clamp and bring in the longer diagonal dimension.
4. Spot Weld Frame.
5. Weld joinery where appropriate.


## Stage 6

1. Grind any excess spot welds so that the frames are flush and flat.
2. Lie the frame flat on the floor
3. Offer up the horizontal supports
4. Spot weld the horizontal supports into place.


## Stage 7

1. Offer Up the other side of the frame.
2. Spot weld in place



## Stage 8

Add the top hoizontal support

1. Check table for squareness
2. Weld up the frame joinery.
3. Move around your corners joints to avoid movement.


## Stage 9

1. Make sure the mill scale is removed from the ends of the slats and middle
2. Offer the Slats up to the table top.
3. Spot weld the ends of the slats and middle to the table frame.
4. Continue this process until the bench top is covered.


## Stage 10

1. Make sure the top is flat
2. Weld Slats - if required.

## Stage 11

1. Grind away excess welds on table so they are flush.
2. Degrease frame.

