204: Installation of wiring systems and enclosures  
**Worksheet 1-110: Tray bending bars**

**NB**: Students must not attempt this exercise before the correct use of all tools and materials has been demonstrated.

**Technical data**

* You are to make sure that your work area is clear and safe for work to proceed.
* You are to make sure that all your work conforms to the requirements of the Health and Safety at Work Act.
* All scribed lines, centre dot and other marks must be removed from the finished surfaces.

**Material required**

|  |  |
| --- | --- |
| 2 off | Mild steel bar 180 x 20 x 10mm |
| 1 off | Steel pan head set pins M6 x 25mm |

**Procedure**

The procedure below (Steps 5 to 13) applies to **both** pieces of mild steel bar, which should be completed simultaneously.

1. Enter the start time on the assessment sheet.
2. Prepare the material requisition for the required materials.
3. **Have the requisition checked before proceeding.**
4. Obtain the material from the stores.
5. Letter stamp your initials on to material for identification.
6. Clean the surface of bar to ensure that it is grease-free in preparation for marking out.
7. Coat two adjacent longitudinal surfaces thinly with marking blue and allow to dry.
8. Mark out, as detailed on the drawing.
9. **Have your work checked before proceeding.**
10. Centre punch the hole centres and drill pilot holes.
11. **Have your work checked before proceeding.**
12. Cut the slot in the end of the bar with care to ensure correct width.
13. Open the pilot hole to the correct size (as shown on the diagram).
14. Using the tap set in the correct order, cut an internal thread in **ONE** of the bars.
15. Using a 6.3mm twist drill, open out the hole in the other bar.
16. Using the M6 pin, join the two bars together.
17. Form the shaped end on the joined bars, as detailed on the drawing, and check that the bars are the correct length.
18. **Hand the work to the Lecturer for marking and assessment.**
19. Enter the finish time on the assessment sheet.

|  |
| --- |
| Exercise 01-110 Tray Bending Bars.png |

Assessments are based on **observed** safety procedures, and the **quality** and **accuracy** of the completed exercise.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | **YES** | **NO** |
| **1.** | Material requisition correct first time | | **□** | **□** |
| **2** | Method statement completed | | **□** | **□** |
| Assessed by: ………....………….. | | |  | |
| **3.** | Material correctly identified on first visit | | **□** | **□** |
| **4.** | Both bars marked out correctly | | **□** | **□** |
| Assessed by: ………....………….. | | |  | |
| **5.** | Pilot holes drilled in correct locations | | **□** | **□** |
| Assessed by: ………....………….. | | |  | |
| **6.** | Slots cut in correct locations | | **□** | **□** |
| **7.** | Slots cut to correct dimensions | | **□** | **□** |
| **8.** | Tapped hole correct size | | **□** | **□** |
| **9.** | Tapped hole square to the face | | **□** | **□** |
| **10.** | Clearance hole correct size | | **□** | **□** |
| **11.** | Clearance hole square to the face | | **□** | **□** |
| **12.** | Formed ends correctly shaped | | **□** | **□** |
| **13.** | Overall dimensions correct | | **□** | **□** |
| **14.** | Work area conformed to requirements of HASAWA | | **□** | **□** |
| **15.** | Correct safety procedures observed at all times | | **□** | **□** |
| **16.** | Overall appearance to a commercially acceptable standard | | **□** | **□** |
| Assessed by: ………....………….. | | |  | |
| Start Date & Time: ………………........………….. | | Finish Date & Time: ……...…...........…………… | | |
| Target Time: 210 minutes | | Time Taken: …………………….........…………… | | |