

BOX PIECES

1. _____ **Obtain 18 ga. cold roll sheet metal from rack. Measure out 2 pieces @ 7.50. Cut in large shear. (7.50 x 48.00)**
 - Write your name on each piece.
2. _____ **Layout bend lines and notches according to Detail 1 drawing.**
 - Use 2nd sheet metal piece as a straight edge.
 - Use combination square to mark 45° notches.
3. _____ **Cut notches using Jigsaw w/ metal blade or large sheet metal snips.**
 - Sheer layout in half using the Iron Worker or large shear when finished with layout.
 - Write your name on each piece.
4. _____ **Using the Box Break, bend the top and bottom lips & the end on both box pieces. (See detail 2 & 3 drawings)**
 - Place the line flush to the hold down jaws - NOT on the break line.
 - **Bend both lips first – then the end piece.**

BOX ASSEMBLY

5. _____ **Square the side and end corner using a framing square or the square tubing jig and tack the corner of each lip. (See detail 4 drawing)**
 - Grind lip corners where needed to obtain proper fit.
 - Do not tack the inside 45° joint of the bottom lip.
6. _____ **Fit and tack weld the two halves together.**
 - Corners must be held square. Check with Framing square or square tubing jig and cross diagonal measurement.
 - Grind lip corners where needed to obtain proper fit.
 - Do not tack on the inside 45° joint of the bottom lip.
 - Tap joint lines tight & square with hammer.
7. _____ **Obtain 48.00" wide sheet of 18 ga. sheet metal. Cut Box Lip piece to .50" wide X 48.00 long using large shear.**
 - Important that the piece is parallel.

8. _____ **Tack weld Box Lip piece to fit on top of box opening. Bend Lip piece to fit on top of box but flush with the opening. (See detail 5 drawing)**
- Start at the middle of the end piece.
 - Use sheet metal vise grips. Lock them to the INSIDE of the bend line.
 - Tack approximately 1.50" – 2.00" a part as needed.
 - Cut off excess with snips or die grinder
 - Tap joints tight with hammer.
10. _____ **Weld box corner joints and the outside of the Box lip - solid.**
- Set welder to the coldest possible setting.
 - Practice on scrap material.
 - Run all beads vertical down. Make them as small as possible.
 - Minimize distortion by welding in different areas.
 - Grind inside 45° joints on bottom lip flush.
11. _____ **Grind & sand smooth inside edge of box lip and 45° joints on inside of box.**
12. _____ **Cut bottom piece to length (15.50) from second piece.**
- Use large sheer or Iron Worker.
 - Place left over material on shelf in storage room.
13. _____ **Tack weld bottom piece to the inside of the box.**
- Push down in the middle to close gaps.
 - Tap outside joint tight with hammer.
14. _____ **Weld bottom joint solid on the outside only. Grind flat. Sand joint smooth.**
- Skip around joint when welding to minimize distortion.
 - Keep bead as small as possible. Weld vertical down only.
15. _____ **Grind & sand smooth all joints and edges.**
- Do not sand box lip fillet if not needed.
 - Sand top of box lip level.

LID PIECE

16. _____ **Cut remaining material to 15.50" long.**
- Place extra in metal storage room.
17. _____ **Layout Lid piece bend lines and notches. (See detail 6 drawing)**
18. _____ **Cut 90° degree notches using Jigsaw, Die Grinder or Snips.**

19. _____ **Layout and punch a 25/32” dia. Hole in the lid using the Iron Worker. (See detail 9 drawing)**
- Determine direction of lid opening.
 - Install punch in Iron Worker.
20. _____ **Bend lips of lid piece using the Box Break.**
- Place the larger section in the break w/ the lip sticking out.
 - Align line to hold down jaws - not the break line.
 - Allow line to show slightly.
 - Bend long edge first then the short ends.
 - Check fit to box.
21. _____ **Weld, grind and sand corners/edges of lid.**

HANGLES and TABS

22. _____ **Obtain and cut two pieces of .25” dia. Round Bar to a rough length of 10.00”.**
- Never cut round stock in Sheer or Iron Worker!
 - Use Cutoff saws or Hacksaw.
23. _____ **Use bending jig and a cutting torch to bend handles and cut to length. (See detail 8 drawing)**
- Clamp jig to the table.
 - Use C-Vise grips to hold bar in jig.
 - Grind and chamfer ends at belt sander.
 - Compare handles and adjust to match.
24. _____ **Cut two pieces of 18 ga. sheet metal, .75” wide X 1.75” long.**
- Radius ends and remove burrs at belt sander.
25. _____ **Install Handle Tab bending Jig in the press and form handle tabs. (See detail 8 drawing)**
- Jig is in 1st grey cabinet.
 - Place tabs in the center of the jig.
26. _____ **Layout handle position on the box. (See detail 9 drawing) Spot weld the tabs to the box.**
- **Handles must in tabs!**
 - Use layout line to keep handles parallel to edge.
 - Center the handle on box end.
 - Set the timer for 0.3 of a second.

LID ASSEMBLY

27. _____ **Obtain hinges and locking assembly from instructor.**

28. _____ **Spot weld prong washer to the lid.**
- Bend flat or grind off prongs from the washer.
 - Position locking washer according to the direction you want the lock to rotate.
 - Spot weld in four places – 90° a part from each other.
29. _____ **Tack and weld hinges to lid and box.**
- Cut shim strips of sheet metal to lift the lip of the lid 1/8" off the top of the box.
 - Tack hinges approximately .25" from end of lid.
 - Plug weld in screw holes and weld edges of hinges.
 - Grind beads if necessary.
30. _____ **Do all final grinding or sanding – ready to paint.**
- You must be able to rub your hands on all surfaces of the box, inside and out, without the fear of being scratched or cut.
31. _____ **Primer box; inside first, then outside using two light coats of gray primer.**
- Tie Mig wire to a handle and hang box while painting outside.
 - 2 lights coats will dry much faster than one heavy coat.
 - Start next project while paint dries.
32. _____ **Spray box with final top coat; inside first, then outside.**
- Bring a can of desired color.
 - Work on next project while paint dries.
33. _____ **Obtain weather stripping from instructor. Apply stripping and the lock.**
- Bend the stripping in the corners – do not cut it.
 - Install the 1-1/2" straight cam plate and bend it if necessary to tighten the closed fit of the lid.
34. _____ **Hand in your procedure sheet and progress record with your project.**